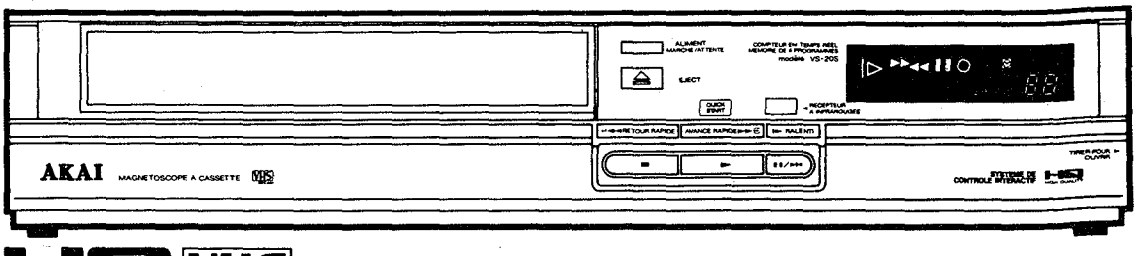
AKAI SERVICE MANUAL



HQ HIGH QUALITY VHS SECAM

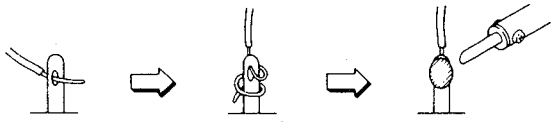
VIDEO CASSETTE RECORDER

MODEL VS-20S

★SAFETY INSTRUCTIONS ★INSTRUCTION DE SECURITE

PRECAUTIONS DURING SERVICING

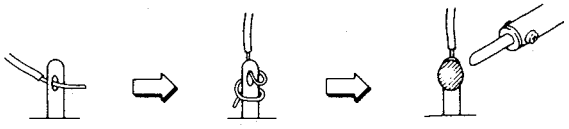
1. Parts identified by the ⚠ (*) symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

PRECAUTIONS A PRENDRE PENDANT LES REPARATIONS

1. Les pièces indentifiées par le symbole ⚠ (*) sont des piéces critiques pour la sécurité. Elles ne doivent être remplacées que par des pièces de numéro spécifie.
2. Outre la sécurité, certaines pièces et ensembles sont spécifiés pour être conformes à des réglements tels que ceux s'appliquant à l'émission de parasites. Ils doivent aussi être remplacés par des pièces de rechange spécifiées.
   Exemples: Convertisseurs RF, unités tuner, sélecteurs de déparasitage, filtres de déparasitage, etc.
3. Utiliser le cabiage interne spécifié. Noter spécialement:
   1) Fils recouverts de tube PVC
   2) Fils à double isolement
   3) Fils haute tension
4. Utiliser des matériaux d'isolement spécifiés pour les parties sous tension dangereuses. Noter spécialement:
   1) Bande d'isolement
   2) Tube en PVC
   3) Rondelles (barrières d'isolement)
   4) Feuilles d'isolement pour transistors
   5) Vis en plastique de fixation pour microrupteur (particulièrement pour tourne-disque)
5. Lors du remplacement de composants du côté courant alternatif primaire (transformateurs, cordons d'alimentation, condensateurs de déparasitage, etc.), enrouler soigneusement les extrémités des fils autour des bornes avant de procéder au soudage.



6. Faire attention à ce que les fils n'entrent pas en contact avec des parties produisant de la chaleur (radiateurs, résistances à film oxyde métal, résistances fusibles, etc.)
7. Contrôler que les fils remplacés n'entrent pas en contact avec des bords tranchants ou des parties pointues.
8. Contrôler aussi les zones voisines des endroits réparés.
9. Faire attention à ce que des corps étrangers (vis, gouttelettes de soudure, etc.) ne demeurent pas à l'intérieur de l'appareil.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

CONTROLE DE SECURITE A EFFECTURE APRES REPARATION

Après avoir effectué une réparation, mesurer le courant de fuite ou la résistance afin de déterminer que les pièces exposées sont suffisamment isolées du circuit d'alimentation.
La mesure du courant de fuite doit être effectuée, dans les conditions normales de fonctionnement de l'appareil, entre des pièces de métal accessibles (comme par exemple châssis, bornes de terre, prises de microphones, connecteurs d'entrée/sortie de signaux, etc.) et la terre en utilisant une résistance de 1500 ohms mise en parrallèle avec un condensateur de 0,15 μF. Le courant de fuite doit être inférieur à 0,5 mA eff. CA.
La mesure de la résistance doit être effectués entre des pièces de métal accessibles exposées et les fiches de la prise du cordon d'alimentation, l'interrupteur d'alimentation (si l'appareil en est pourvu) étant activé.
La résistance ne doit pas être supérieure à 2,2 Mohms.

SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

Symbol indicates the destination of the units as listed below.

Symbol	Classification	Principal Destination	System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong Kong		
EM	E	Middle East	PAL	B, G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B, G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	W. Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong Kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

Quick start function

This VCR contains the quick start function.
This means that when a cassette tape is inserted into the VCR or the POWER is turned on with a cassette tape in the VCR, the tape will be loaded automatically, and at the same time QUICK START indicator will be turned on and the drum motor will be started to rotate.

* If the VCR is neglected in stop mode for several minutes, the quick start function will be automatically canceled. Accordingly, QUICK START indicator will be turned off and the drum motor will be stopped with the tape loaded. When the POWER is turned off with a cassette tape in the VCR, the tape will be unloaded and remain in the VCR.

Auto functions

This VCR contains the following auto functions.

1. If a cassette tape is inserted when the POWER is off, the POWER will be automatically turned on.
2. If a cassette tape without its recording safety tab is inserted, the VCR will automatically begin to playback the tape.
3. While a cassette tape without its recording safety tab is in the VCR, if the REC button is pressed, the cassette tape will be ejected automatically.
4. Even if the POWER is OFF, the cassette tape can be ejected by pressing the EJECT button.
5. Between the hours of 23:00 and 6:00, if the VCR is not in use, the front panel display is automatically dimmed to a lower light level.

CODES DE DESIGNATION DE DESTINATION PRINCIPALE DES MODELES

Les codes indiquent la destination des appareils cités cidessous.

Code	Classification	Destination principale	Système	
			Couleur	Diffusion
EA	S	Australie	PAL	B, G
ED	E	Chine	PAL	D
EDG	E	Europe de l'Est	PAL	D, K
EDI	E	Chine, Hong Kong	PAL	D, K, I
EG	E	Espagne, Europe du Nord, autres	PAL	B, G
	Y7	Arabie Saoudite		
EK	B	Royaume-Uni	PAL	I
	Y1	Hong Kong		
EM	E	Moyen-Orient	PAL	B, G
	Y7	Arabie Saoudite		
EO	E	Hollande, Suisae, Europe du Nord	PAL	B, G
	V	Italie		
EOH	E	Hollande, Belgique	PAL	B, G
	V	Italie		
EOG	V	Allemagne de l'Ouest	PAL	B, G
ES	E	Afrique du Sud, Irlande, Hong Kong	PAL	I
EV	E	Asie du Sud-Est	PAL	B, G
	U	Asie du Sud-Est, Moyen-Orient		
	Y1	Mouvelle Zélande		
	Y7	Arabie Saoudite		
EZ	S	Nouvelle Zélande	PAL	B, G
EGN	E	Moyen-Orient	PAL, NTSC	B, G
	Y7	Arabie Saoudite		
S	E	France	SECAM	L
SK	E	Amérique Latine, Océanie, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Suisse	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Amérique Latine	NTSC	M
J	J	Japon	NTSC	M

Fonction lecture immédiate (QUICK START)

Ce magnétoscope est pourvu d'une fonction de lecture immédiate.
Ceci signifie que lorsqu'une cassette est introduite dans le magnétoscope, ou lorsque celui-ci est mis sous tension avec une cassette déjà en place, la bande sera chargée automatiquement, l'indicateur QUICK START s'allume alors et le moteur de tambour se met à tourner.

* Si le magnétoscope est laissé en mode STOP pendant plusieurs minutes, la fonction de lecture immédiate est automatiquement annulée. L'indicateur QUICK START s'éteint et le moteur de tambour s'arrête, mais la bande reste chargée. Lorsque le magnétoscope est mis hors tension avec une cassette en place, la bande est déchargée mais reste dans l'appareil.

Fonctions automatiques

Ce magnétoscope est pourvu des fonctions automatiques suivantes:

1. Quand une cassette est inserée alors que le magnétoscope est en fonction ATTENTE, il se met automatiquement en fonction MARCHE.
2. Quand une cassette sans languette de sécurité est inserée, le magnétoscope commence immédiatement la lecture.
3. Si une cassette sans languette de sécurité est en place, et si la touche d'enregistrement (REC) est sollicitée, la cassette est automatiquement éjectée.
4. Même si le magnétoscope est en fonction ATTENTE, il est possible d'éjecter la cassette en sollicitant la touche d'éjection (EJECT).
5. Si le magnétoscope n'est pas utilisé entre 23h00 et 6h00, la luminosité de l'affichage de la face avant est automatiquement diminuée.

EDIT switch

The EDIT switch is used only when you want to record from this VCR to another VCR. When recording on another VCR, you may not want to record the Monitor Displays as they appear on this VCR (for example, the PLAY ► indicator, STOP ■ indicator etc.), onto the new tape. In that case, set the EDIT switch to ON. Now when you press a tape transport button, the indicator appears only on the VCR's front panel display, not on the TV screen or the new tape.

Safety Lock system (Remote control only)

This VCR's PLAY button can be locked to prevent access by small children.

To lock: With the VCR POWER ON, press and hold the remote control's STOP button for about 8 seconds. An "L" will appear on the front panel display. Tape play will not function until the VCR is unlocked.
Even if the POWER is turned off, the VCR PLAY mode will remain locked until released. Other modes will remain operable.

To unlock: Press and hold the remote control's PLAY button for about 8 seconds.

INDEX SEARCH system (Remote control only)

This VCR is equipped with the INDEX SEARCH system which allows you to directly locate the beginning of any recorded segment on a tape, within 1 segment of your starting point, in either forward or reverse direction, provided the recording was made on this VCR, or providing the recording is equipped with control signals. Each time a recording is made on this VCR, i.e. each time the REC button is pressed, a control signal is automatically recorded along with the program. This means that even while a recording is being made, if you press the REC button again, a new control signal is added to the tape at that point. This feature is very convenient for marking any important point on a tape.

Commutateur d'édition (ASSEMBL.)

Ce commutateur ne sert que lorsque vous désirez enregistrer depuis ce magnétoscope à cassettes vers un autre magnétoscope. Dans ce cas, vous ne voudrez peut-être pas enregistrer les messages de contrôle affichés par ce magnétoscope (par exemple, le voyant de reproduction (►), le voyant d'arrêt (■), etc.) sur la nouvelle bande. Placez alors le commutateur d'édition (ASSEMBL.) en position MARCHE. Maintenant, lorsque vous appuyez sur une touche de transport de bande, le voyant n'apparaîtra que sur l'affichage du panneau frontal du magnétoscope, et non sur l'écran de télévision ou sur la nouvelle bande. Pour revenir à un affichage normal sur l'écran, placez le commutateur ASSEMBL. sur la position ARRET.

Système de verrouillage

La touche de reproduction de ce magnétoscope à cassettes peut être verrouillée pour éviter que de jeunes enfants accèdent à cet appareil.

Pour verrouiller: Le magnétoscope à cassettes étant sous tension ou hors circuit, appuyez sur la touche d'arrêt de la télécommande et maintenez-la enfoncée pendant environ 8 secondes. Un "L" apparaîtra sur l'affichage du panneau frontal. La reproduction de cassettes ne pourra plus s'effectuer jusqu'au déverrouillage du magnétoscope à cassettes.
Même si l'appareil est mis hors circuit, le mode de reproduction du magnétoscope à cassettes sera annulé jusqu'au déverrouillage. Les autres modes resteront utilisables.

Pour déverrouiller: Appuyez sur la touche de reproduction de la télécommande et maintenez-la enfoncée pendant environ 8 secondes.

Recherche d'index (uniquement sur la télécommande)

Ce magnétoscope est équipé d'un système de recherche d'index qui vous permet de localiser le début de quel segments enregistrés sur une bande, dans la limite de 1 segment compté depuis votre point de départ, soit vers l'avant soit vers l'arrière, à condition que l'enregistrement ait été fait sur ce magnétoscope, ou à condition que l'enregistrement soit pourvu de signaux de contrôle. A chaque fois qu'un enregistrement est fait sur ce magnétoscope, c'est-à-dire à chaque fois que la touche d'enregistrement (ENRG.) est enfoncée, un signal de contrôle est automatiquement enregistré en même temps que l'émission. Autrement dit si vous appuyez à nouveau sur la touche ENRG. même après avoir commencé un enregistrement, un nouveau signal de contrôle est ajouté à la bande à ce moment-là. Cette fonction est fort utile pour marque un point important sur la bande.

NOTE: When you press the REC button to begin recording from the recording standby mode (PAUSE/STILL button), new control signals will not be added.

Example 1: 1. Insert a recorded tape.
2. Let's say you are at the beginning of the tape and you want to view the 2nd program on the tape. Press the right side of the INDEX SEARCH button. The VCR display shows the fast forward indicator and the [S] indicator. When the VCR gets to the beginning of the program, playback of segment 2 will begin automatically.

Example 2: Imagine that you have recorded 12 individual segments on a tape (Music videos for example). Let's say segment 11 is finished and you want to go back and view it again. Since 11 is already finished, press the left side of the INDEX SEARCH button. The VCR will rewind all the way back to the beginning of segment 11 and begin playback.

INTRO SCAN system (Remote control only)

This VCR is capable of quickly fast forwarding to the beginning of each recorded segment on a tape, briefly playing back that segment, and then fast forwarding to the next segment.
This system also works in combination with the control signal which is recorded at the beginning of each recorded segment.
Press the INTRO SCAN button on the remote control. The VCR will immediately fast forward the tape to the beginning of the program and play about the first 8 seconds. Then, the VCR will again fast forward the tape to the beginning of the next recorded segment and again playback the first 8 seconds of the program.
This operation continues until the tape is finished or until you selected another mode (such as PLAY or STOP). While INTRO SCAN is searching, the F.FWD indicator lights and the PLAY indicator flashes. When INTRO SCAN is in playback, the F.FWD indicator flashes and the PLAY indicator lights. The [S] indicator lights all the time that INTRO SCAN is working.

Remarque: Lorsque vous appuyez sur la touche d'enregistrement (ENRG.) pour commencer à enregister à partir du mode d'attente d'enregistrement (touche de pause/arrêt sur image PAUSE ARR/IMGE), aucun nouveau signal de contrôle ne sera ajouté.

Exemple 1: 1. Insérez une bande enregistrée.
2. Disons que vous êtes au début de la bande et que vous voulez regarder le 2ème programme contenu sur la bande. Appuyez sur le côté droit de la touche INDEX. L'affichage du magnétoscope montre le voyant d'avance rapide et le symbole [S]. Lorsque le magnétoscope se rapproche du début du programme souhaité, la reproduction du segment 2 commence automatiquement.

Exemple 2: Imaginez que vous avez enregistré 12 segments individuels sur une cassette (vidéos musicales par exemple). Disons maintenant que le segment 11 est fini et que vous désirez reculer et le regarder à nouveau. Puisque 11 est déjà terminé, appuyez sur le côté gauche de la touche INDEX. Le magnétoscope reculera jusqu'au début du segment 11 et commencera la reproduction.

Balayage des introductions (uniquement sur la télécommande)

Ce magnétoscope à cassettes peut avancer rapidement jusqu'au début de chaque segment enregistré sur une cassette, reproduire ce court segment et continuer en avance rapide jusqu'au segment suivant.
Ce système fonctionne également en combinaison avec le signal de contrôle enregistré au début de chaque segment enregistré.
Appuyez sur la touche INTRO SCAN de la télécommande. Le magnétoscope à cassettes avancera immédiatement sur la bande jusqu'au début du programme et en reproduira les 8 premières secondes environ. Puis, le magnétoscope avancera à nouveau rapidement jusqu'au début du segment enregistré suivant et en reproduira également les 8 premières secondes.
Cette opération se poursuit jusqu'à la fin de la bande ou jusqu'à ce que vous sélectionniez un autre mode (par exemple le mode de reproduction ou d'arrêt). Lorsque le système INTRO SCAN cherche l'introduction, le voyant d'AVANCE RAPIDE est allumé et le voyant de reproduction clignote. Lorsque le système INTRO SCAN reproduit l'introduction, le voyant d'AVANCE RAPIDE clignote et le voyant de reproduction est allumé. Le voyant [S] est allumé tout au long de l'opération de balayage d'introduction.

Double speed playback (Remote control only)

This VCR can play back a tape at twice its normal speed. (Only a tape recorded at SP speed) Press the x2 button on the remote control while the tape is in play. No sound will be heard in this mode. Press PLAY button to resume normal speed.

Reproduction à vitesse redoublée (uniquement sur télécommande)

Ce magnétoscope à cassettes peut reproduire une bande deux fois plus vite que la vitesse normale. (Uniquement pour une cassette enregistrée à vitesse normale)
Appuyez sur la touche x2 de la télécommande tandis que la bande est reproduite. Aucun son ne sera audible dans ce mode. Appuyez sur la touche de reproduction pour revenir à la vitesse normale.

★ SPECIFICATIONS

Format	VHS Standard
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary Heads	2 video heads
RF input	System L VHF: ch B – C, 1 – 6 UHF: ch 21 to 69 CABLE: ch B – Q
RF output	System L type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
Recording (line input)	SECAM
Playback (line output)	SECAM
Video Line input level Line output level S/N ratio Horizontal resolution	 0.5 to 2.0 Vp-p/75 ohms, unbalanced 1.0 Vp-p/75 ohms, unbalanced More than 45 dB More than 220 lines
Audio Line input level Line output level S/N ratio Frequency response	 –8 dBm/50 kohms, unbalanced –6 dBm/1 kohms, unbalanced More than 40 dB 70 to 10,000 Hz
Recording/Playback time	240 min. with E-240 cassette
Tape speed	23.39 mm/sec.
Quick finder	approx. 7 times normal speed
Timer Programs Clock reference	 4 program/1 month and QUICK TIMER Quartz crystal
Display	TV screen & FL (Tape counter, Timer etc.)
Power requirements	220V AC, 50 Hz
Power consumption	26W
Operating temperature	5°C to 40°C
Dimensions	425 (W) x 84 (H) x 340 (D) mm
Weight	5.5 kg
Standard accessory	Antenna cable . . . . . 1 Remote control unit . . . . . 1 Batteries for remote control . . . . . 2 Operator's manual 1

* For improvement purposes, specifications and design are subject to change without notice.

★ SPÉCIFICATIONS

Format	VHS standard
Système d'enregistrement vidéo	Système à deux têtes rotatives, à azimutage incliné, à balayage hélicoidal
Têtes rotatives	2 têtes vidéo
Entrée RF (HF)	Système L Canaux VHF B – C, 1 – 6 Canaux UHF 21 à 69 Canaux Câble B à Q
Sortie RF (HF)	Système L, type modulation, canaux réglables UHF 30 à 39 (préréglé sur canal 36)
Enregistrement (entrée de ligne)	SECAM
Reproduction (sortie de ligne)	SECAM
Vidéo Niveau d'entrée de ligne Niveau de sortie de ligne Rapport signal/bruit. Résolution horizontale	 0,5 à 2,0 Vp-p/75 ohms, assymétrique 1,0 Vp-p/75 ohms, assymétrique Plus de 45 dB Plus de 220 lignes
Audio Niveau d'entrée le ligne Niveau de sortie de ligne S/B Réponse en fréquence	 –8 dB/50 kohms, assymétrique –6 dB/1 kohm, assymétrique Plus de 40 dB 70 Hz à 10.000 Hz
Durée enregistrement/reproduction	240 mn. avec cassette E-240
Vitesse de bande	23,39 mm/sec.
Recherche rapide	environ 7 vois la vitesse normale
Minuterie Programmes Référence d'horloge	 4 programmes/1 mois et minuterie rapide Cristal à quartz
Affichage	Ecran TV (compteur de bande, minuterie, etc.)
Alimentation	220 V CA. 50 Hz
Consommation	26 W
Température de fonctionnement	5°C à 40°C
Dimensions	425 (L) x 84 (H) x 340 (P) mm
Poids	5,5 kg
Accessoires standard	Antenne câble . . . . . 1 Unité de télécommande . . . . . 1 Piles pour la télécommande . . . . . 2 Manuel de l'utilisateur 1

* Par suite d'améliorations, la présentation et les spécifications sont susceptibles de modification sans préavis.

I. CONTROLS/COMMANDE

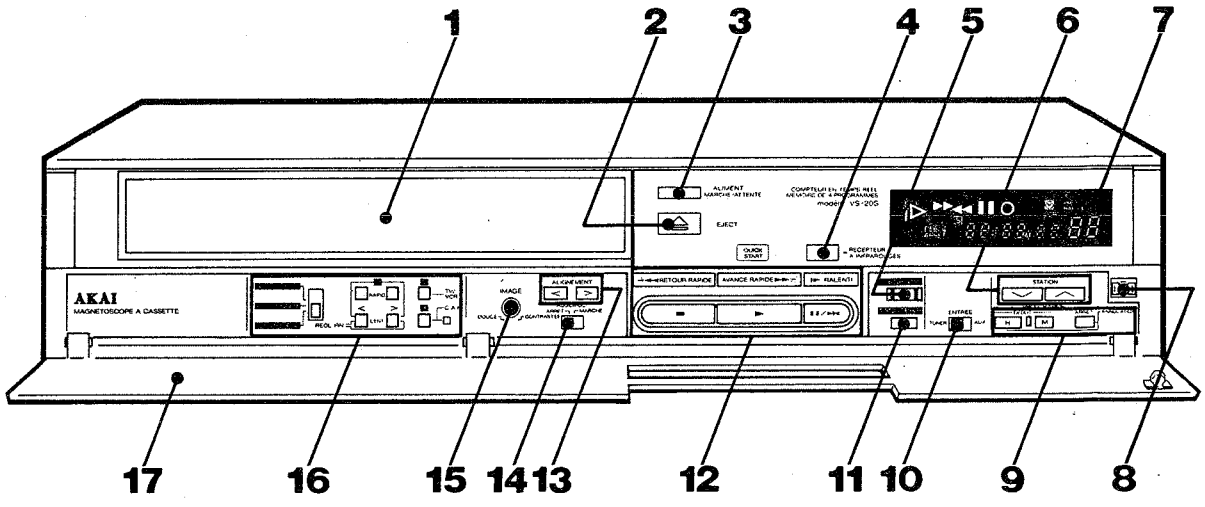


Fig. 1-1 Front

1. **Cassette loading slot.**
2. **EJECT button.**
   To eject the video cassette tape.
3. **POWER button.**
   To turn on and off the Akai VCR.
4. **Remote sensor window.**
   For reception of the remote control's signal.
   * Keep this window clean for remote control operation.
5. **REC (Recording) button.**
6. **CHANNEL selector.**
   To select a preset channel with the built-in tuner of the VCR.
7. **FL (Fluorescent) display.**
   Tells you what the VCR is doing.
8. **Sub-panel door latch.**
9. **QUICK TIMER buttons.**
   To preset recording end time or quick programme recording.
10. **INPUT SELECTOR switch.**
    To switch between internal tuner and external input.
11. **TIMER button.**
    To stand by for automatic recording.
12. **Tape transport buttons.**
    To run the tape for recording or playback.
13. **TRACKING/SLOW TRACKING control.**
    To fine tune the playback picture.
14. **EDIT switch.**
    For removing the on-screen characters during tape dubbing.
15. **SHARP/SOFT PICTURE control.**
    To soften or sharpen the video picture.
16. **Tuning controls.**
    Used when presetting stations.
17. **Sub-panel door.**

1. **Chargez ici la cassette vidéo**
2. **Touche d'éjection (EJECT).**
   Pour éjecter la cassette vidéo.
3. **Commutateur d'alimentation (ALIMENT).**
   Pour mettre sous tension et hors circuit le magnétoscope à cassettes Akai.
4. **Pour recevoir le signal de la télécommande provenant de l'unité de télécommande sans fil Akai.**
   * Gardez cette fenêtre propre pour l'utilisation de la télécommande.
5. **Touche d'enregistrement (ENRG).**
6. **Sélecteur de canal (STATION).**
   Pour sélectionner un canal préréglé avec le tuner incorporé du mangétoscope à cassettes Akai.
7. **Affichage fluorescent du magnétoscope à cassettes.**
   Vous indique ce que l'appareil est en train de faire.
8. **Loquet du panneau de recouvrement.**
9. **Touches de minuterie rapide (PROG.RAPIDE).**
   Pour prérégler l'heure de fin d'enregistrement ou un enregistrement rapide d'émission.
10. **Sélecteur d'ENTREE (TUNER/AUX).**
    Pour passer du tuner interne à une entrée externe et inversement.
11. **Touche de MINUTERIE.**
    Pour mettre en attente en vue d'un enregistrement automatique.
12. **Touches de défilement de la bande.**
    Pour faire défiler la bande en vue d'un enregistrement ou d'une reproduction.
13. **Commande d'ALIGNEMENT.**
    Pour effectuer une syntonisation fine de l'image reproduite.
14. **Commutateur de duplication (ASSEMBL.)**
    Pour éffacer les fonctions affichées sur l'écran lorsque vous copiez une cassette vers un autre magnétoscope à cassettes.
15. **Commande d'IMAGE DOUCE/CONTRASTEE.**
    Pour adoucir ou contraster l'image vidéo.
16. **Commandes de syntonisation.**
    Pour syntoniser les canaux préréglés.
17. **Panneau de recouvrement des commandes.**

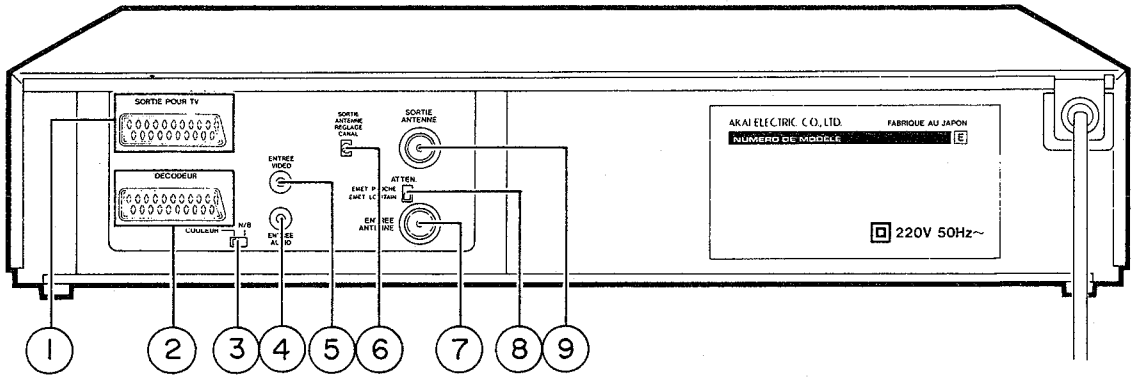


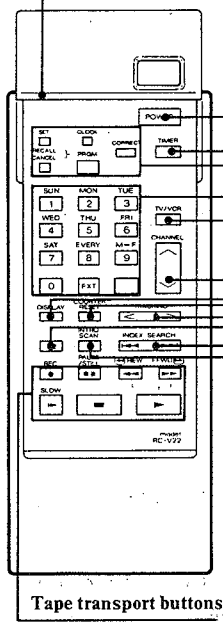
Fig. 1-2 Rear

1. OUT CONNECTOR FOR TV
2. DECODER CONNECTOR
3. VIDEO MODE SELECTOR
4. AUDIO IN
5. VIDEO IN
6. RF OUT CHANNEL ADJUSTER
7. ANT. IN
8. LOCAL/DX ATTENUATOR SWITCH
9. RF OUT

1. SORTIE POUR TV
2. DECODER
3. SELECTEUR DE MODE VIDEO
4. ENTRE AUDIO
5. ENTREE VIDEO
6. SORTIE ANTENNE REGLAGE CANAL
7. ENTREE ANTENNE
8. ATTENUATEUR EMET. PROCH/EMET. LOINTAIN
9. SORTIE ANTENNE

REMOTE CONTROL UNIT/SYSTÈME DE TÉLÉCOMMANDE

The remote control contains operation buttons which are used the same way as the operation buttons on the front panel of the Akai VCR, and many which appear on the remote control only. The remote control can be used from a distance of up to 5 meters.



Transmitter beam

POWER button.

TIMER button.
To stand-by for automatic recording.

To set and store all the CLOCK and PROGRAM settings.
SET and CORRECT buttons.
PROGRAM button.
CLOCK button.
RECALL and CANCEL buttons.

CLOCK, PROGRAM and CHANNEL setting buttons.
For single digit numbers, press "0" and the number.
Use these buttons for immediate access to any station without scanning the whole band.

TV/VCR button.

Channel selector.

DISPLAY button.
To choose the CLOCK/COUNTER and display it on the TV screen.

COUNTER RESET button.
To reset the tape counter.

TRACKING/SLOW TRACKING control.
To produce a clearer playback picture in any play mode.

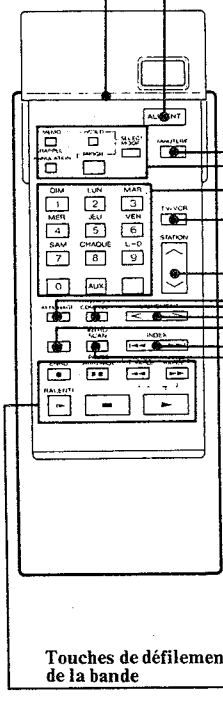
×2 (Double speed play) button. (Remote control only).

INDEX SEARCH button. (Remote control only.).
To find the beginning of any recorded segment on the tape.

INTRO SCAN button. (Remote control only.)
For playing back the first 8 seconds of any program.

Tape transport buttons

Les touches de l'unité de télécommande s'utilisent de la même manière que les touches du panneau frontal du magnétoscope à cassettes Akai. Certaines d'entre elles n'apparaissent que sur l'unité de télécommande. La télécommande peut être utilisée à une distance maximale de 5 mètres de l'appareil.



Rayon de l'émetteur

Touche d'alimentation (ALIMENT)

Touche de la MINUTERIE.
Pour mettre en attente en vue d'un enregistrement automatique.

Pour régler et pour stocker tous les réglages d'heure (HORLD) et de programme (PROGR.).
Touches de réglage (MEMO) et de correction (SELECT MODIF.).
Touche de programme (PROG.).
Touche d'horloge (HORLD).
Touches de RAPPEL et d'ANNULATION.

Touches de réglage pour l'heure (HORLD), la programmation (PROGR.) et le canal (STATION).
Pour un nombre à chiffre unique, appuyez sur "0" puis sur le chiffre.
Utilisez ces touches pour accéder immédiatement à n'importe quelle station sans avoir à balayer la gamme entière.

Touche de TV/VCR.

Sélecteur de canal.

Touche d'AFFICHAGE.
Pour choisir l'heure/compteur de bande et afficher celui-ci sur l'écran TV.

Touche de remise à zéro du compteur de bande (ZERO COMPTEUR).
Pour remettre à zéro le compteur de bande.

Commande d'alignement/alignement lent (ALIGNEMENT).
Pour obtenir une image reproduite plus claire dans n'importe quel mode de reproduction.

Touche de vitesse redoublée (× 2).
(Seulement sur la télécommande).

Touche de recherche d'index (INDEX).
(Seulement sur la télécommande).
Pour trouver le début de tout segment enregistré sur la bande.

Touche de balayage des intros (INTRO SCAN).
(Seulement sur la télécommande).
Pour reproduire les 8 premières secondes de tout programme.

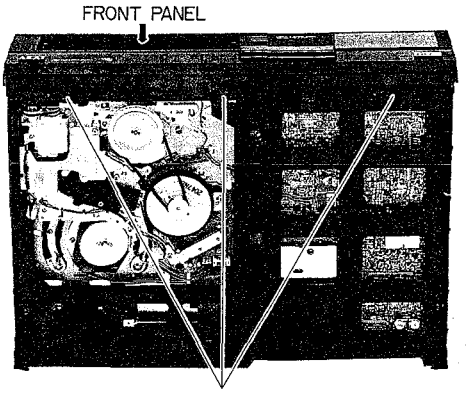
Touches de défilement de la bande

II. DISASSEMBLY/DEMONTAGE

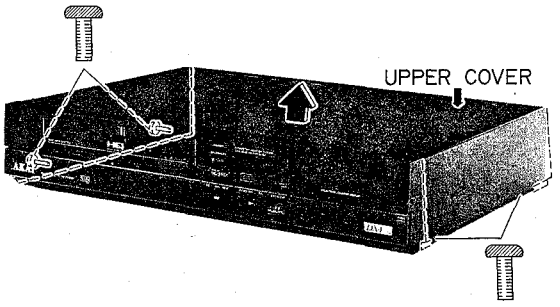
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

Au cas d'une panne, etc. qui requiert le démontage, veuillez l'effectuer selon la séquence indiquée sur les photos. Effectuer le remontage selon la séquence inverse.

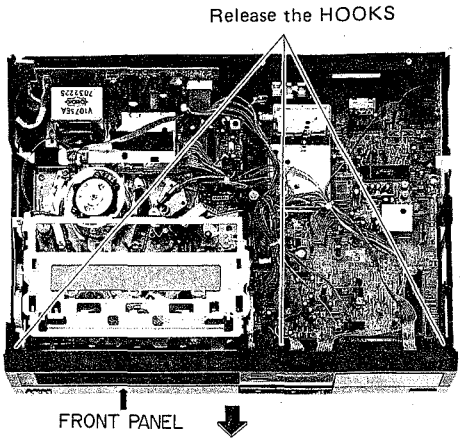
3 Removal of FRONT PANEL



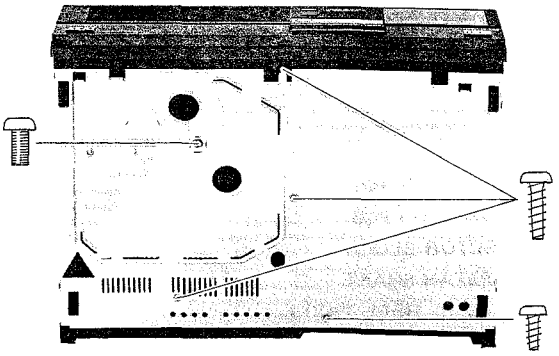
1 Removal of UPPER COVER



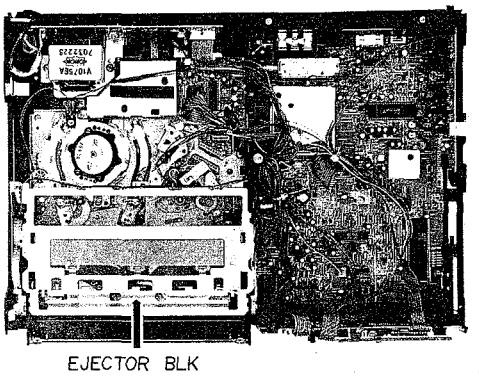
4



2 Removal of BOTTOM COVER



5



※ Please refer to "4-1-1 REMOVING THE EJECTOR BLK"

* Photographs employed on this page are of model VS-35EK.

* C'est le modèle VS-35EK qui se réfère aux photos employées dans ce paragraphe.

III. PRINCIPAL PARTS LOCATION

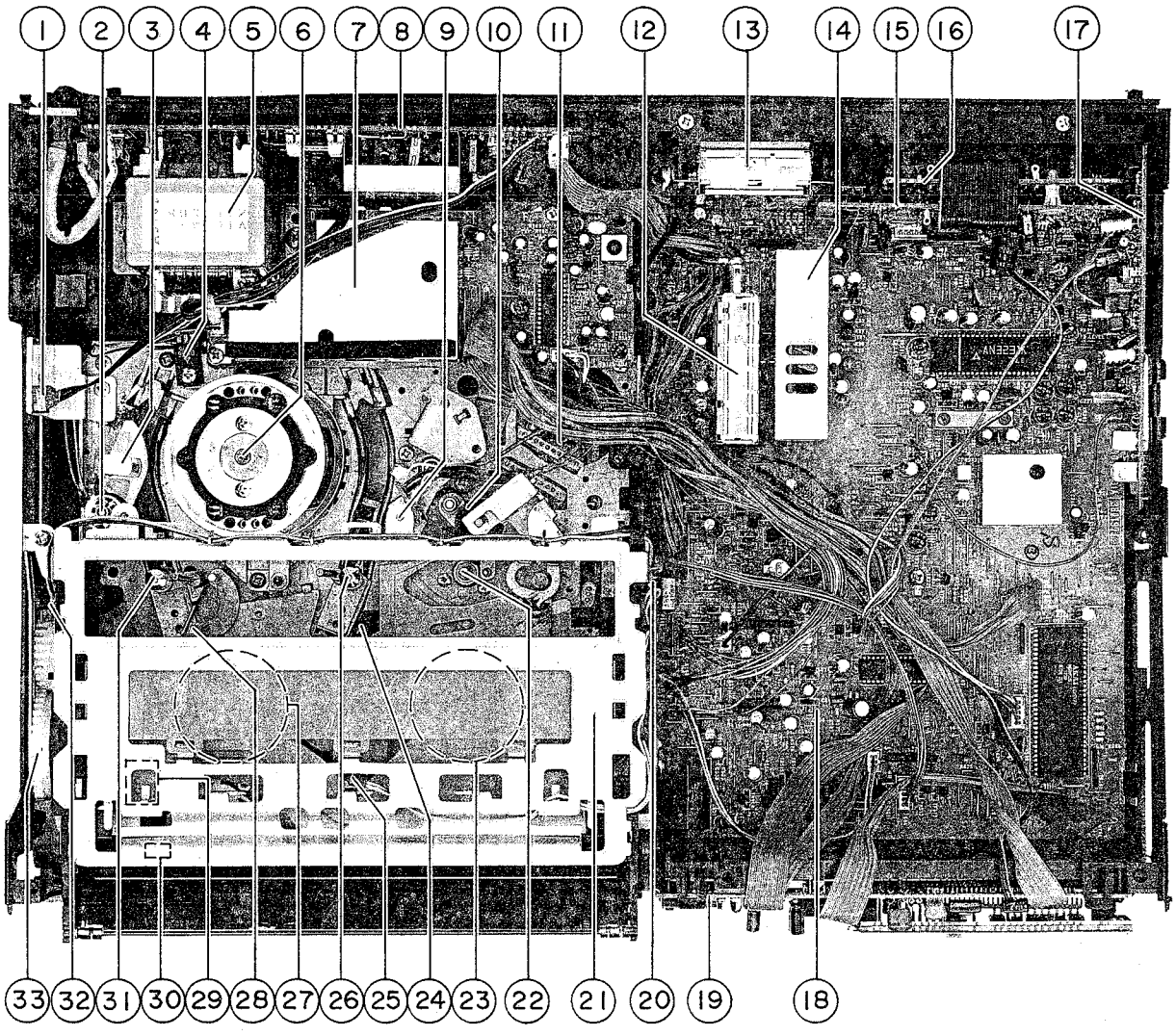


Fig. 3-1 Top view

* The photograph employed on this page is of model VS-35S.

* C'est le modèle VS-35S qui se réfère aux photos employées dans ce paragraphe.

1. TR (2) PCB
2. SUPPLY TAPE, GUIDE
3. FULL TRACK ERASE HEAD
4. TR (1)PCB
5. POWER TRANSFORMER
6. HEAD DRUM BLOCK
7. PRE AMP PCB
8. POWER SUPPLY PCB
9. AUDIO/CONTROL HEAD
10. PINCH ROLLER
11. CAPSTAN MOTOR PCB
12. TUNER UNIT
13. RF CONVERTOR UNIT
14. VIF UNIT
15. 21 PIN (B) PCB
16. 21 PIN (A) PCB
17. CHROMA PCB
18. MAIN PCB
19. OPERATION PCB
20. SENSOR (T) PCB
21. EJECTOR BLOCK
22. CAPSTAN SHAFT
23. TAKE-UP REEL TABLE
24. SENSOR LED
25. ROOM LAMP (NOT USE)
26. T.U. LOADING LEADER
27. SUPPLY REEL TABLE
28. TENSION ARM
29. LOADING MOTOR
30. REC SAFETY SWITCH
31. S. LOADING LEADER
32. SENSOR (S) PCB
33. LOADING MECHA. BLOCK

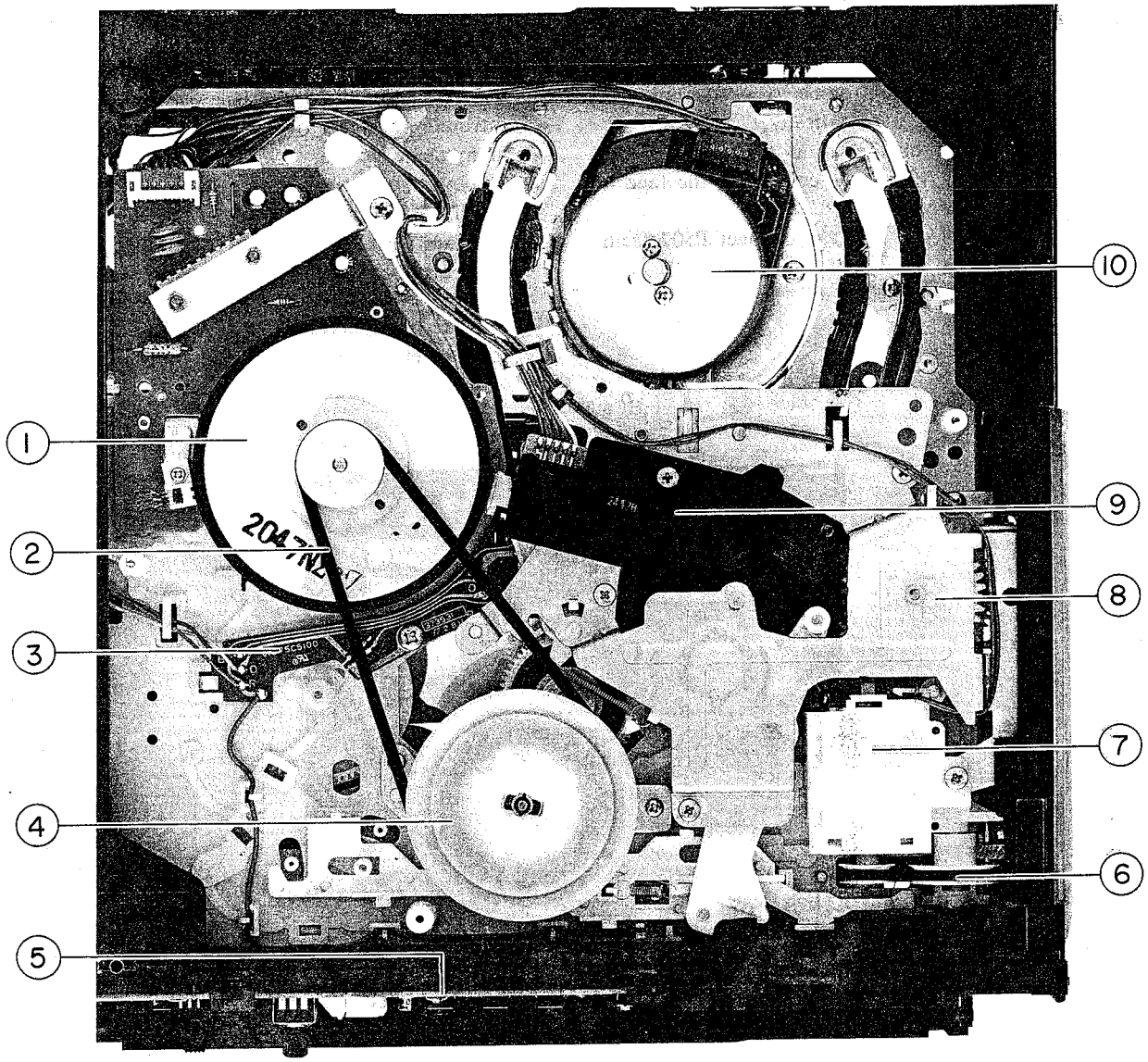


Fig. 3-2 Rear view

1. CAPSTAN MOTOR BLK
2. IDLER BELT
3. SENSOR PCB
4. CLUTCH BLK
5. PRE SET PCB
6. LOADING BELT
7. LOADING DRIVE BLK
8. LOADING MECH. BLK
9. MODE SELECTOR
10. DRUM MOTOR BLK

4-1. EJECTOR BLOCK

4-1-1. REMOVING THE EJECTOR BLOCK

1) Press the POWER button to turn ON the VCR and insert the cassette tape into the VCR. The unit will enter the PLAY mode automatically.
2) Press the POWER button again to turn OFF the VCR. Disconnect AC power cord after the tape is unloaded completely.
3) Remove two screws Ⓐ and disconnect P504 from MAIN P.C. Board.
4) Remove the EJECTOR BLOCK.

4-1. ENSEMBLE EJECTEUR

4-1-1. RETRAIT DE L'ENSEMBLE EJECTEUR

1) Appuyer sur l'interrupteur d'alimentation (ALIMENT) pour mettre le magnétoscope sous tension et introduire une cassette. L'appareil se met de lui-même en mode de lecture.
2) Appuyer de nouveau sur l'interrupteur d'alimentation (ALIMENT) pour mettre le magnétoscope en fonction ATTENTE. Débrancher le cordon d'alimentation après avoir vérifié que la bande est bien déchargée.
3) Enlever les deux vis Ⓐ (screw Ⓐ) et déconnecter P504 de la plaquette PRINCIPALE.
4) Retirer l'ensemble éjecteur (Ejector Block).

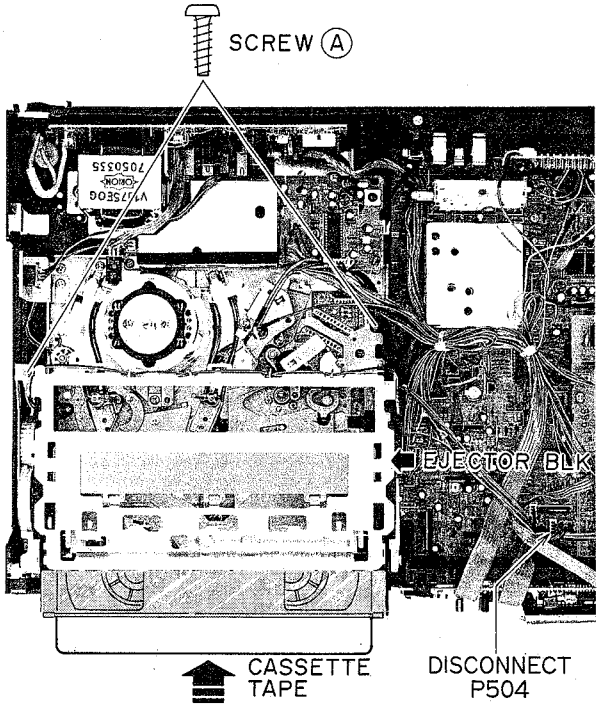


Fig. 4-1

4-1-2. INSTALLATION OF THE EJECTOR BLOCK

1) Install the EJECTOR BLOCK on the MECHA CHASSIS as shown in Fig. 4-2.
2) Tighten two screws Ⓐ and connect P504.
3) Plug in AC POWER CORD and press the POWER button to turn ON the VCR.
4) Confirm that unit will function correctly.

4.1.2. MISE EN PLACE DE L'ENSEMBLE EJECTEUR

1) Poser l'ensemble éjecteur sur (Ejector Block) le châssis MECANISME de la manière illustrée à la Fig. 4-2.
2) Serrer les deux vis Ⓐ (screw Ⓐ) et connector P504.
3) Brancher le CORDON D'ALIMENTATION et appuyer sur l'interrupteur d'alimentation (POWER) du magnétoscope.
4) Vérifier que l'appareil fonctionne correctement.

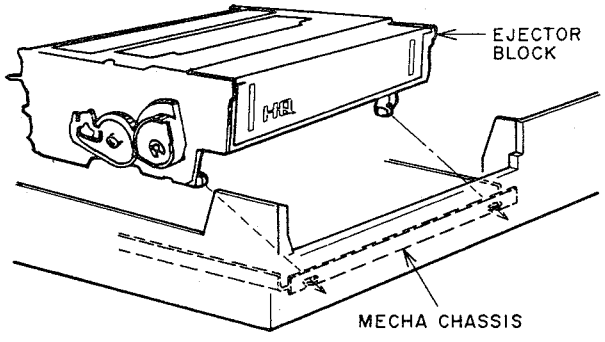


Fig. 4-2

4-2. LOADING MECHANISM BLOCK

4-2-1. REMOVAL OF MECHANISM BLOCK

1) Remove the EJECTOR BLOCK (Refer to 4-1-1. EJECTOR REPLACEMENT.)
2) Remove two screws Ⓐ then remove the transistor and the diode.
3) Disconnect P700, P701 and P800 from the PRE-AMP P.C. Board.
4) Remove two screws Ⓑ then remove the PRE-AMP P.C. Board.

4-2. ENSEMBLE MECANISME DE CHARGEMENT

4-2-1. RETAIT DE L'ENSEMBLE MECANISME DE CHARGEMENT

1) Retirer l'ensemble éjecteur (voir 4-1-1. RETRAIT DE L'ENSEMBLE EJECTEUR).
2) Enlever les deux vis Ⓐ (screw Ⓐ) et retirer les transistors diode.
3) Déconnector P700, P701 et P800 de la plaquette CI de PRE-AMPLI.
4) Enlever la vis Ⓑ (screw Ⓑ) et retirer la plaquette de PREAMPLI.

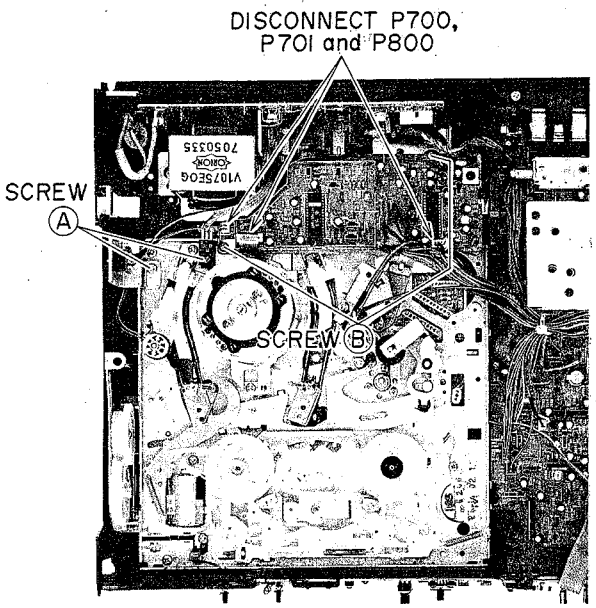


Fig. 4-3

5) Disconnect P502 from the DRUM MOTOR P.C. Board on the bottom of VCR.
6) Remove three screws Ⓒ then remove the MECHA BLK.

5) Déconnecter P502 de la plaquette de MOTEUR DE TAMBOUR située au bas du magnétoscope.
6) Enlever les trois vis Ⓒ (screw Ⓒ) et retirer l'ENSEMBLE MECANISME.

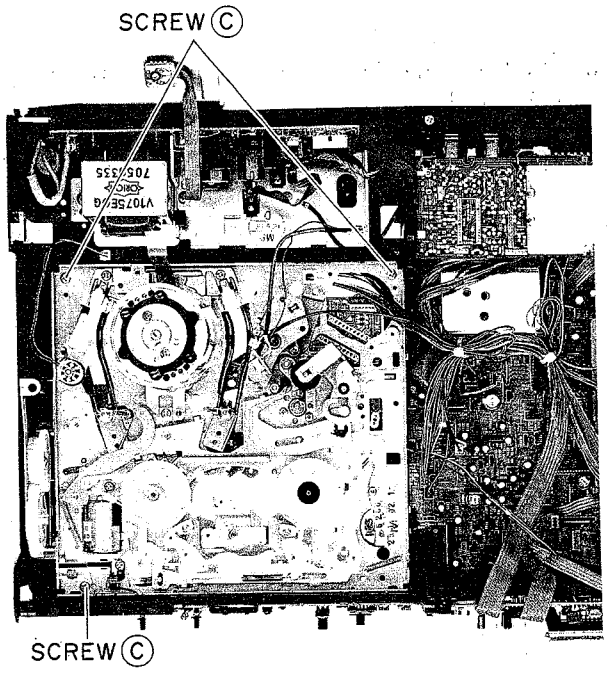


Fig. 4-4

4-2-2. REASSEMBLE OF THE LOADING MECHANISM BLOCK

1) Attach the GEAR FL DRIVE to CHASSIS CAM GEAR PART.

4-2-2. REMONTAGE DE L'ENSEMBLE MECANISME DE CHARGEMENT

1) Fixer la ROUE DE COMMANDE FL (GEAR FL DRIVE) au SUPPORT D'ENGRENAGES A CAME du châssis (CHASSIS CAM GEAR PART).

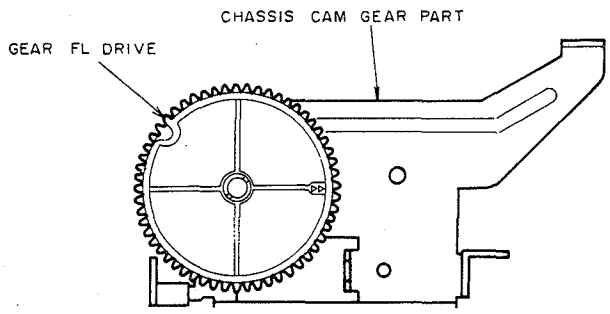


Fig. 4-5

2) Install the GEAR WARM PART as shown in Fig. 4-6.

2) Poser le engrenage à vis sans fin (GEAR WARM PART) de la manière illustrée à la Fig. 4-6.

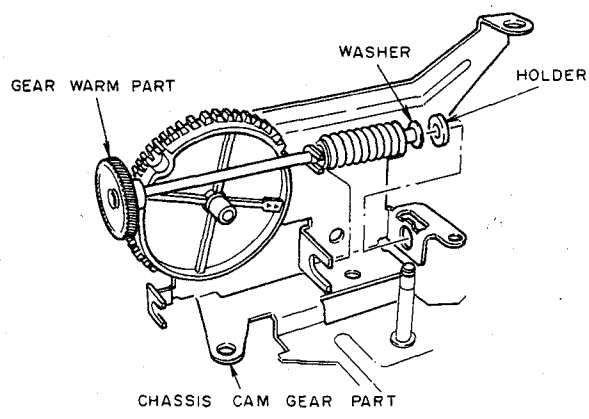


Fig. 4-6

3) Attach the GEAR WHEEL to CHASSIS CAM GEAR PART so that the GEAR FL DRIVE mark ⓐ coincide with the GEAR WHEEL mark (b-1), and fasten the GEAR WHEEL with slit washer.

3) Fixer la ROUE DENTEE (GEAR WHEEL) au SUPPORT D'ENGRENAGES A CAME du châssis de manière à ce que le repère ⓐ de la ROUE DE COMMANDE FL (GEAR FL DRIVE) coïncide avec le repère (b-1) de la ROUE DENTEE (GEAR WHEEL) et fixer la ROUE DENTEE (GEAR WHEEL) au moyen d'une rondelle fendue.

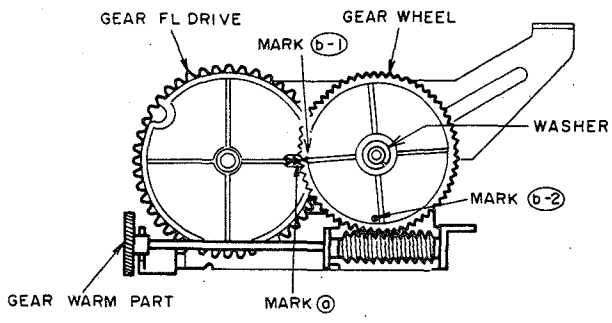


Fig. 4-7

4) Attach the LEVER CAM SLIDER as shown in Fig. 4-8.

4) Fixer le COULISSEAU DE LEVIER A CAME (LEVER CAM SLIDER) de la manière illustrée à la Fig. 4-8.

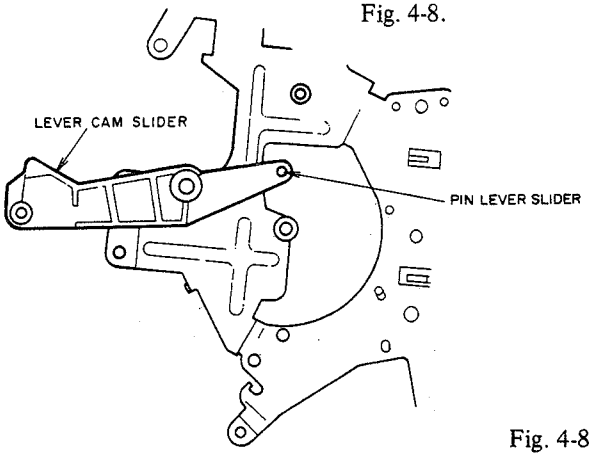


Fig. 4-8

5) Attach the GEAR CAM CENTER so that pin lever slider head appears through the hall Ⓐ of the GEAR CAM CENTER.

5) Fixer la ROUE CENTRALE A CAME (GEAR CAM CENTER) de manière à ce que la tête de la goupille du levier à came apparaisse à l'orifice Ⓐ (HALL Ⓐ) de la ROUE CENTRALE A CAME (GEAR CAM CENTER).

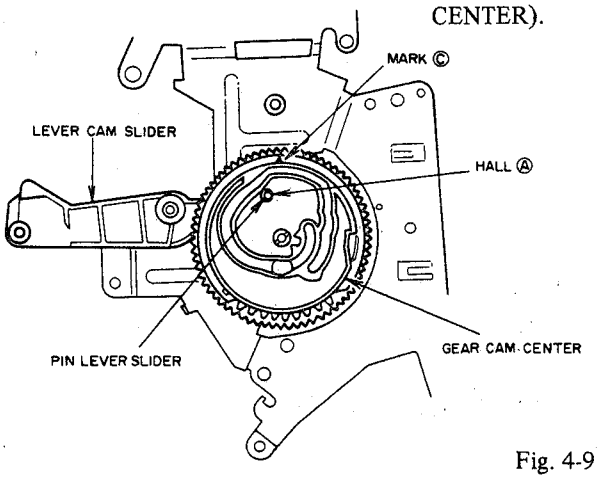


Fig. 4-9

6) Attach the GEAR CAM TENSION so that the GEAR CAM TENSION mark (d-1) coincide with the GEAR WHEEL mark (b-2), and moreover the GEAR CAM CENTER mark C should be located between the marks (d-2) of the GEAR CAM TENSION.

6) Fixer la ROUE DE TENSION A CAME (GEAR CAM TENSION) de manière à ce que son repère (d-1) coïncide avec le repère (b-2) de la ROUE DENTEE (GEAR WHEEL). Le repère © de la ROUE CENTRALE A CAME (GEAR CAM CENTER) doit de plus être situé entre les repères (d-2) de la ROUE DE TENSION A CAME (GEAR CAM TENSION).

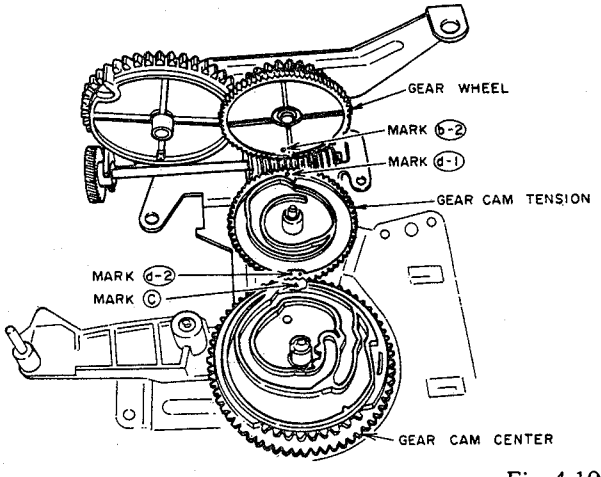


Fig. 4-10

7) Attach the ARM FWD BRAKE and SPRING as shown in Fig. 4-11.

7) Fixer le BRAS FREIN AVANT (ARM FWD BRAKE) et le ressort (SPRING) de la manière illustrée à la Fig. 4-11.

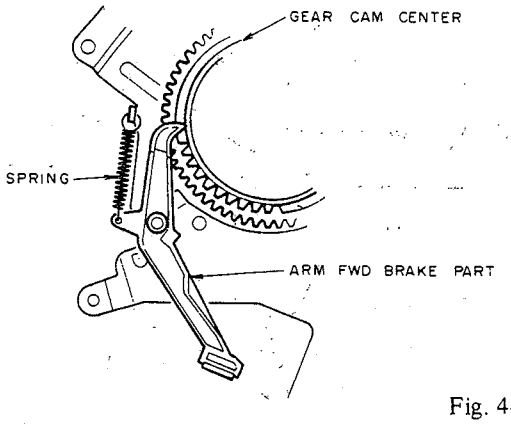


Fig. 4-11

8) Set the GEAR TOGGLE (TU) and (S) to the unloaded position with your fingers. At this time match the marks of the GEAR TOGGLE (TU) and (S) as shown in Fig. 4-12.

8) Mettre à la main les DÉCLENCHEURS D'ENGRENAGE (GEAR TOGGLE) (TU) et (S) sur la position déchargée. Faire coïncider les repères des DECLENCHEURS D'ENGRENAGE (GEAR TOGGLE) (TU) et (S) de la manière illustrée à la Fig. 4-12.

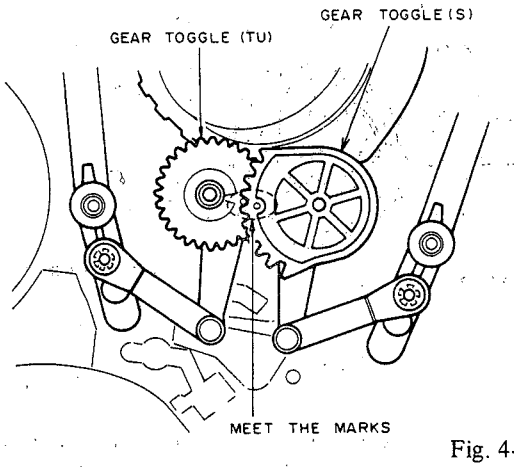


Fig. 4-12

9) Attach the LOADING MECHA. BLK with holding the GEAR TOGGLE (TU) in the direction of the arrow as shown in Fig. 4-13. Tighten the LOADING MECHA BLK with four screws Ⓐ and Ⓑ.

9) Fixer l'ENSEMBLE MECANISME DE CHARGEMENT, de la manière illustrée à la Fig. 4-13, tout en maintenant le DECLENCHEUR D'ENGRENAGE (GEAR TOGGLE) (TU) dans le sens indiqué par la flèche.

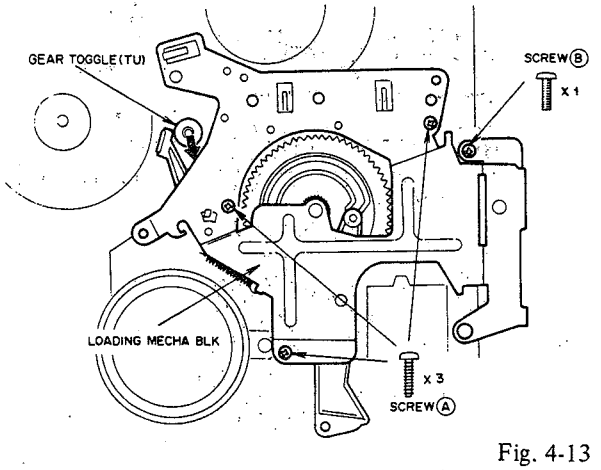


Fig. 4-13

10) Coincide the marks of MODE SELECT SW and attach the MODE SELECT SW BLK onto the LOADING MECHA BLK as shown in Fig. 4-14. Thghten the MODE SELECT SW BLK with a screw Ⓒ.

10) Faire coïncider les repères du CONTACTEUR DE SELECTION DE MODE et poser l'ENSEMBLE CONTACTEUR DE SELECTION DE MODE (MODE SELECT SW BLK) sur l'ENSEMBLE MECANISME DE CHARGEMENT de la manière illustrée à la Fig. 4-14. Fixer l'ENSEMBLE CONTACTEUR DE SELECTION DE MODE (MODE SELECT SW BLK) au moyen de la vis C (SCREW Ⓒ).

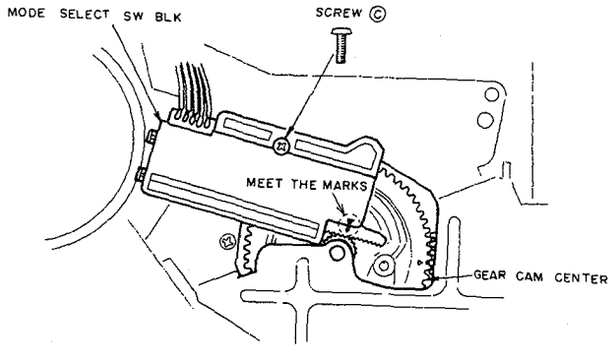


Fig. 4-14

11) Attach the BELT IDLER as shown in Fig. 4-15.

11) Fixer la COURROIE INTERMEDIAIRE (BELT IDLER) de la manière illustrée à la Fig. 4-15.

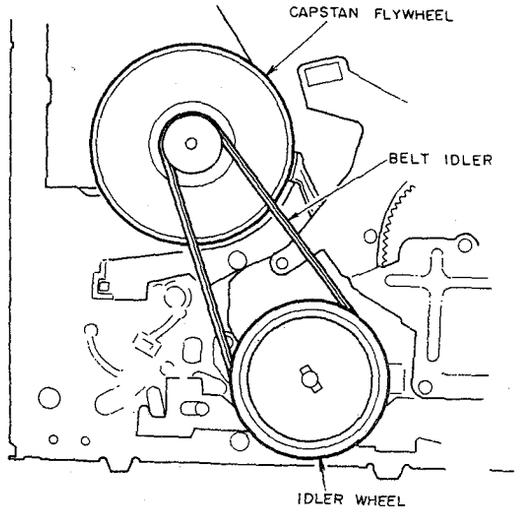


Fig. 4-15

12) Attach the LOADING DRIVE BLK and tighten with a screw Ⓓ.

12) Poser l'ENSEMBLE DE COMMANDE DE CHARGEMENT (LOADING DRIVE BLK) et le fixer au moyen de la vis Ⓓ (SCREW Ⓓ).

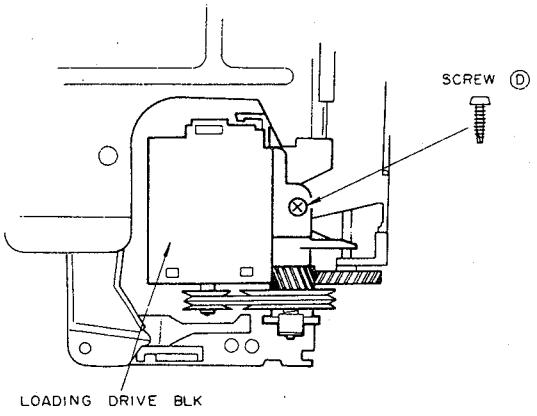


Fig. 4-16

4-3. UPPER DRUM (HEAD DRUM REPLACEMENT)

4-3-1. REMOVAL OF UPPER DRUM

1) Unsolder the four relay leads and remove two upper drum fixing screws.
2) Gently lift and remove the UPPER DRUM.

4-3. TAMBOUR SUPERIEUR (REMPLACEMENT DU TAMBOUR DE TETE)

4-3-1. DEMONTAGE DU TAMBOUR SUPERIEUR

1) Dessouder les quantres plombs de relais et enlever les deux vis de fixation du tambour supérieur (upper drum fixing screws).
2) Soulever avec précaution le tambour supérieur (UPPER DRUM).

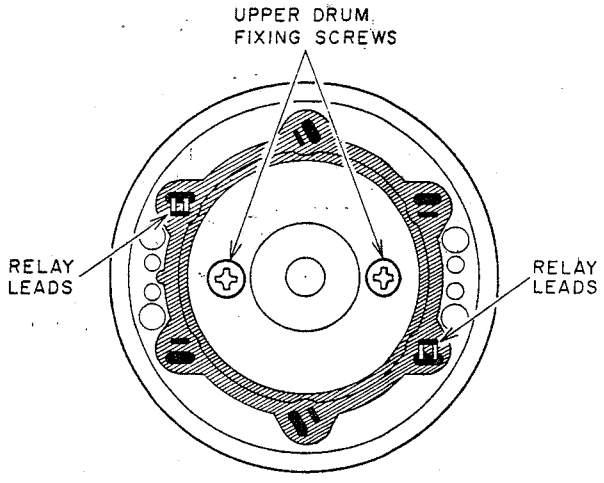


Fig. 4-17

4-3-2. INSTALLATION OF UPPER DRUM

1) Install the UPPER DRUM to the LOWER DRUM so that upper drum convex Ⓐ and lower drum concave Ⓑ locate in a same direction.

NOTE. Height precisior is required for the proper performance, and the head tips are fragile, so the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar pre-load.
(b) Before fixing, clean both surfaces where the upper drum and the rotary transformer part meet with alcohol.
(c) When installation of the UPPER DRUM, if it does not go on to the shaft easily, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually. Tighten them at 6 kg-cm torque.

4-3-2. MONTAGE DU TAMBOUR SUPERIEUR

1) Fixer le tambour supérieur au tambour inférieur de manière à ce que la partie convexe Ⓐ (UPPER DRUM CONVEX Ⓐ) et la partie concave Ⓑ (LOWER DRUM CONCAVE Ⓑ) soient dirigées dans le même sens.

REMARQUE:

La précision au niveau de la hauteur est requise pour obtenir de correctes performance, et les extrémités têtes sont fragiles, de ce fait les points suivants doivent être pris en considération lorsque vous replacez le bloc tambour supérieur.

(a) Ne desserrez pas l'ensemble de vis situé sur le collier de charge préalable.
(b) Avant toute fixation, nettoyez avec de l'alcool pur les surfaces où le tambour supérieur et le transformateur rotary se joignent.
(c) Lors de l'installation du tambour supérieur, si il ne s'adapte pas aisément sur l'arbre, nettoyez l'orifice du tambour supérieur avec de l'alcool pur et huilez légèrement l'arbre.
(d) Assurez vous que les trous des vis de fization du tambour supérieur sur le transformateur rotary et que les trous des vis de fixation du tambour supérieur s'adaptent exactement avant d'insérer les vis de fixation.
(e) Resserrez les deux vis de fixation du tambour supérieur alternativement et graduellement, Resserrez les en couple de 6 kg-cm.

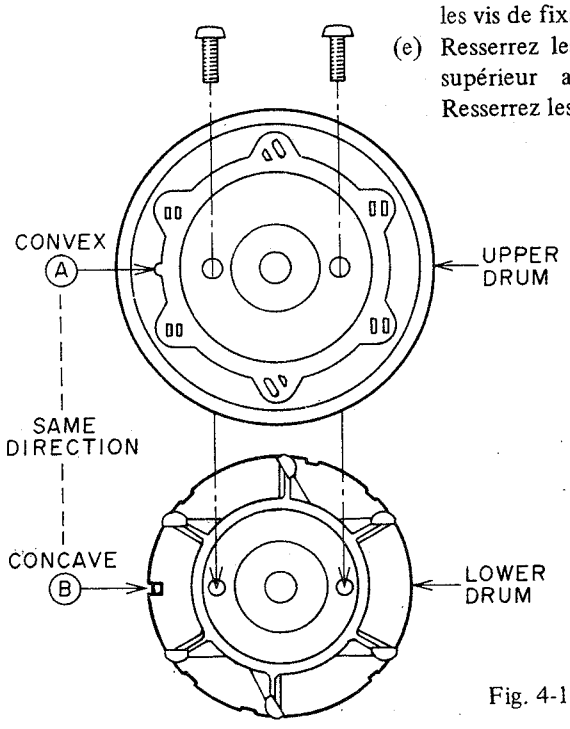


Fig. 4-18

4-3-3. AFTER REPLACEMENT

After replacement, the following adjustments are necessary for the proper performance.

1) Control head phase adjustment. (Tape transport adj. 5-2-4)
2) PB switching point adjustment. (Electrical adj. Step 2)
3) Video REC current adjustment. (Electrical adj. Step 9)

4-3-3. APRES REMPLACEMENT

Une fois le remplacement terminé, les réglages suivants doivent être effectués pour obtenir de bonnes performances.

1) Réglage de phase de la tête CTL (Réglages du défilement de la bande, Para. 5-2-4).
2) Réglage du point de commutation en Pecture (Réglages électriques, Opération 2).
3) Réglage du courant d'enregistrement vidéo (Réglages électriques, Opération 9).

4-4. DRUM MOTOR REPLACEMENT

1) Disconnect the connector P102 from the DRUM MOTOR P.C. Board.
2) Remove two screws Ⓐ then remove the ROTARY PLATE.

4-4. REMPLACEMENT DU MOTEUR DE TAMBOUR

1) Débrancher le connecteur P102 de la plaquette de moteur de tambour.
2) Enlever les deux vis Ⓐ (SCREW Ⓐ) et retirer la plaque rotative.

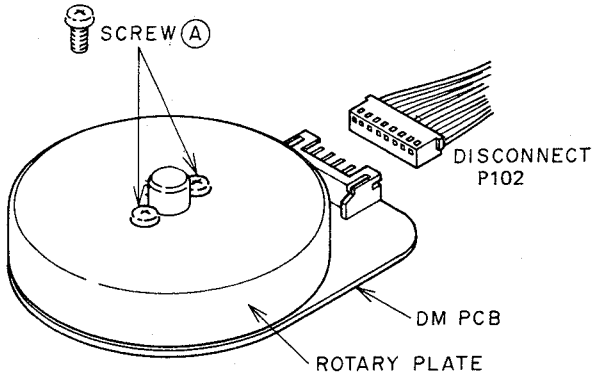


Fig. 4-19

3) Remove three screws Ⓑ and replace the DRUM MOTOR.

3) Enlever les deux vis Ⓑ (SCREW Ⓑ) et remplacer le moteur de tambour.

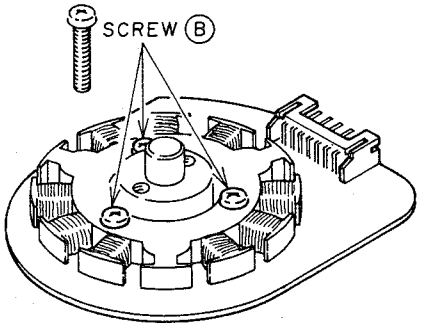


Fig. 4-20

4) Attach the ROTARY PLATE to the DRUM MOTOR so that the rotary plate hall ⓐ and collar preload hall ⓑ locate in the opposite direction.

4) Fixer la plaque rotative au moteur de tambour de manière à ce que l'orifice ⓐ (HALL ⓐ) de la plaque rotative et l'orifice ⓑ (HALL ⓑ) du collier de précharge soient dirigés dans le sens opposé.

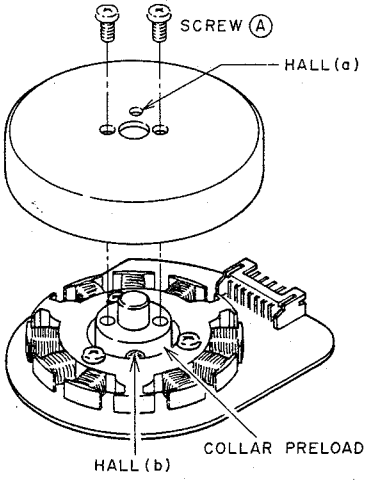


Fig. 4-21

5-1. BACK TENSION ADJUSTMENT

1) Remove the EJECTOR BLOCK. (Refer to 4-1-1. EJECTOR BLOCK REPLACEMENT.)
2) Press the POWER button to turn ON the VCR. the VCR will enter the tape loaded mode without cassette tape.
3) In the play mode, loosen the screw Ⓐ and set the tension arm position to the correct position as shown in Fig. 5-1 by the tension band holder position, then tighten the screw Ⓐ.
4) Press the POWER button to turn OFF.
5) Set the reference tape TF-512CBS (AT-750799) and put some weight on the reference tape as a stabilizer.
6) Press the POWER button and PLAY button.
7) Observe the TV screen and adjust V-HOLD for TV so that switching point appears on the TV screen as shown in Fig. 5-2.
8) Select the hook position of the TENSION SPRING where the smallest skew should be obtained.

5-1. REGLAGE DE LA TENSION DE RAPPEL

1) Retirer l'ensemble éjecteur (Voir 4-1-1. REMPLACEMENT DE L'ENSEMBLE EJECTEUR).
2) Appuyer sur l'interrupteur d'alimentation (ALIMENT) pour mettre le magnétoscope en fonction MARCHE. Le magnétoscope se met en mode de bande chargée sans cassette.
3) En mode de lecture, desserrer la vis Ⓐ (screw Ⓐ), mettre le bras de tension à la position correcte au moyen du porte-courroie tendeur, de la manière illustrée à la Fig. 5-1, et resserrer la vis Ⓐ (screw Ⓐ).
4) Appuyer sur l'interrupteur d'alimentation (ALIMENT) pour mettre le magnétoscope hors tension.
5) Mettre la bande de référence TF-512CBS (AT-750799) en place et la stabiliser en posant dessus un léger poids.
6) Appuyer sur l'interrupteur d'alimentation (ALIMENT) et sur la touche de lecture.
7) Observer l'écran de télévision et régler la stabilité verticale de TV de manière à ce que le point de commutation apparaisse sur l'écran de la manière illustrée à la Fig. 5-2.
8) Sélectionner la position d'accrochage du ressort tendeur (TENSION SPRING) de manière à obtenir une déformation oblique minimale.

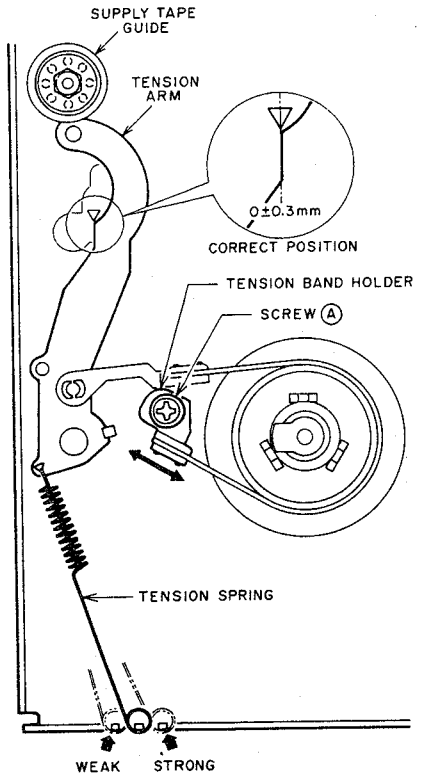


Fig. 5-1

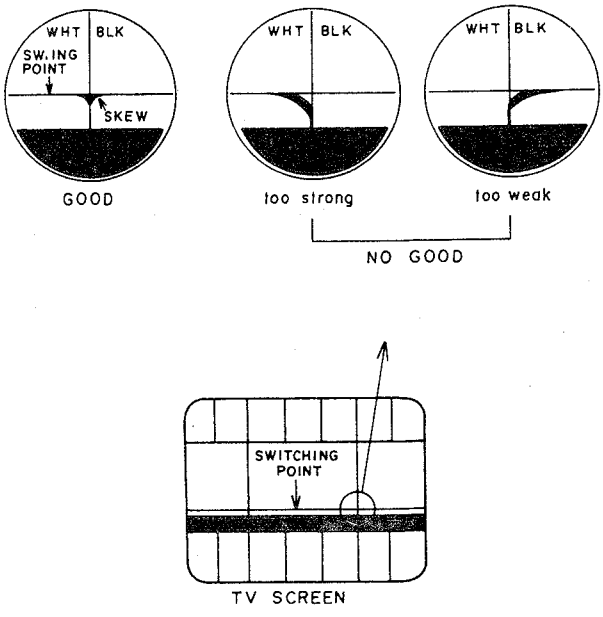


Fig. 5-2

5-2. TAPE TRANSPORT ADJUSTMENTS

5-2-1. TAPE CURL ADJUSTMENT AT THE TAKE-UP TAPE GUIDE

1) Play back the reference tape TF-530RFS (AT-751775).
2) Turn the screw ⓐ on the A/C HEAD BLK until the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle.

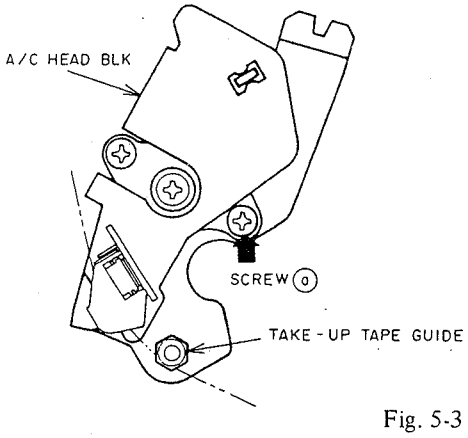


Fig. 5-3

5-2-2. CONFIRMATION OF TAPE CURL AT THE SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle.

5-2. REGLAGES DU DEFILEMENT DE LA BANDE

5-2-1. REGLAGE D'ONDULATION DE LA BANDE AU NIVEAU DU GUIDE-BANDE "TAKE-UP"

1) Lire la bande de réference TF-530RFS (AT-751775).
2) Tourner la vis ⓐ (screw ⓐ) de l'ensemble de tête A/C jusqu'à ce que le bord de la bande touche à peine la partie inférieure du GUIDE-BANDE "TAKE-UP" (TAPE GUIDE) et qu'il ne présente aucune ondulation ou pliure.

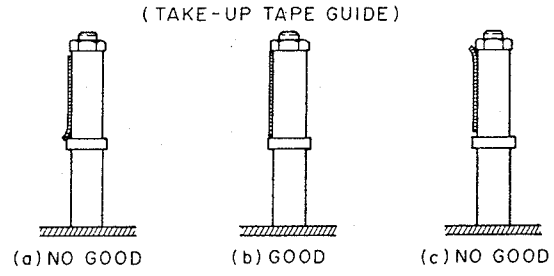


Fig. 5-4

5-2-2. CONFIRMATION DU REGLAGE D'ONDULATIONAN AU NIVEAU DU GUIDE-BANDE "SUPPLY"

Vérifier que le bord de la bande touche à peine le GUIDE-BANDE "SUPPLY" (SUPPLY TAPE GUIDE) et qu'il n'est pas ondulé ou plié.

Fig. 5-5

5-2-3. AUDIO HEAD AZIMUTH ADJUSTMENT

1) Connect an AC volt meter or an oscilloscope to AUDIO OUT (TP301).
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the screw ⓑ to obtain the maximum audio output (TP301).

5-2-3. REGLAGE DE L'ALIGNEMENT DE LA TETE AUDIO

1) Connecter un voltmètre CA ou un oscilloscope à la prise de sortie AUDIO OUT (TP301).
2) Lire la bande de référence TF-530RFS (AT-751775).
3) Régler la vis ⓑ (SCREW ⓑ) de manière à obtenir un niveau de sortie audio maximal. (TP301).

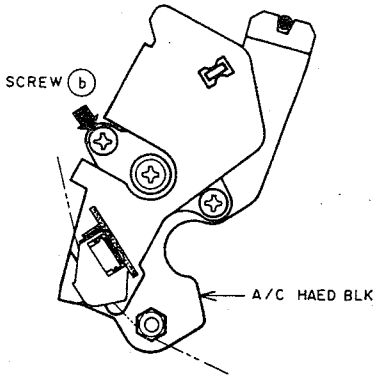


Fig. 5-6

5-2-4. CONTROL HEAD PHASE ADJUSTMENT

1) Connect an oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Press the TRACKING buttonn [<] or [>] on the front panel until "T" mark can be seen in the center position as shown in Fig. 5-7.
4) Insert a sharpness screwdriver into A/C HEAD BASE and hall ⓐ as shown in Fig. 5-8.
5) Move the A/C HEAD base by moving a screwdriver in the directions of the arrow as shown in Fig. 5-8 to obtain the maximum RF output.

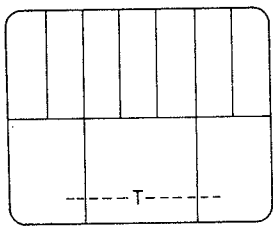


Fig. 5-7 On the TV screen

5-2-4. REGLAGE DE PHASE DE LA TETE CTL

1) Connecter un oscilloscope à TP202 (ENVE) sur la plaquette PRINCIPALE.
2) Lire la bande de référence TF530RFS (AT-751775).
3) Appuyer sur la touche d'alignement (TRACKING) [<] ou [>] de la face avant jusqu'à ce que le repère "X" apparaissent au centre de la manière illustrée à la Fig. 5-7.
4) Introduire le bout d'un tournevis dans l'orifice ⓐ (HALL ⓐ) de la base de la TETE A/C (A/C HEAD BASE) de la manière illustrée à la Fig. 5-8.
5) Déplacer la base de la TETE A/C (A/C HEAD BASE) en deplaçant le tournevis dans le sens indiqués par la double flèche, de la manière illustrée à la Fig. 5-8, de manière à obtenir une enveloppe RF maximale.

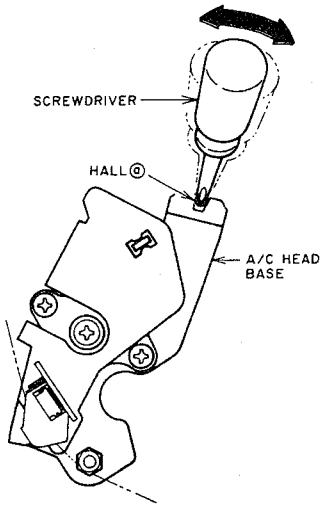


Fig. 5-8

5-2-5. ARM REVIEW HEIGHT ADJUSTMENT

1) Play back the beginning part of E-180 tape and set the unit in REVIEW mode with pressing REW button.
2) Turn the ARM REVIEW height nut ⓐ so that the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle between TAKE-UP TAPE GUIDE and CAPSTAN SHAFT.

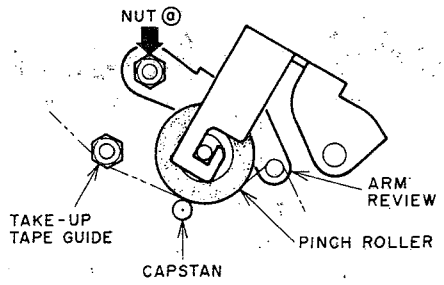


Fig. 5-9

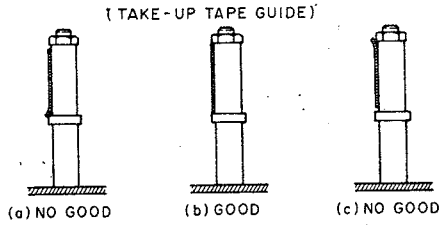


Fig. 5-10

5-2-5. REGLAGE DE LA HAUTEUR DU BRAS DE REMBOBINAGE

1) Lire le début de la bande E-180 et appuyer ensuite sur la touche de rembobinage (Retour Rapide) pour mettre l'appareil dans ce mode.
2) Tourner l'écrou ⓐ (NUT ⓐ) de réglage de la hauteur du BRAS DE REMBOBINAGE de manière à ce que le bord de la bande touche à peine la partie inférieure du GUIDE-BANDE "TAKE-UP" (TAKE-UP TAPE GUIDE) et ne présente aucune ondulation où pliure entre le GUIDE-BANDE "TAKE-UP" et l'AXE DE CABESTAN (TAKE-UP TAPE GUIDE and CAPSTAN SHAFT).

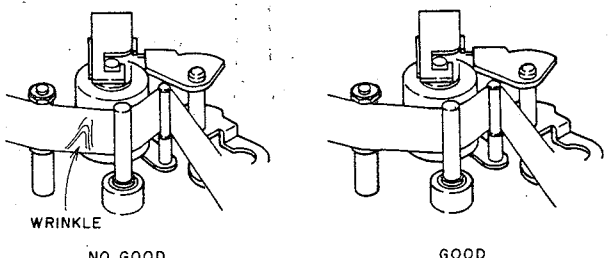


Fig. 5-11

5-2-6. LOADING LEADER HEIGHT ADJUSTMENTS

1) Slightly loosen the set screw at lower part of the LOADING LEADERS (L), (R) so that LOADING LEADERS can be adjusted with reasonable tightness. (Refer to Fig. 5-12.)
2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
4) Turn the LOADING LEADER heads with a screwdriver to obtain flat RF envelope as ideal envelope shown in Fig. 5-13.
5) After the adjustments, tighten the LOADING LEADER set screws.

5-2-6. REGLAGE DE LA HAUTEUR DES GUIDES DE CHARGEMENT

1) Desserrer légèrement la vis d'arrêt située à la partie inférieure des GUIDES DE CHARGEMENT (LOADING LEADERS) (G.) et (D.) afin de pouvoir régler les GUIDES DE CHARGEMENT avec suffisament de précision (voir la Fig. 5-12).
2) Lire la bande de référence TF530RFS (AT-751775).
3) Connecter un oscilloscope à TP202 (ENVE) sur la plaquette CI PRINCIPALE.
4) Tourner la tête des GUIDE DE CHARGEMENT (LOADING LEADER) au moyem d'un tournevis afin d'obtenir une enveloppe RF identique à l'enveloppe idéale montrée à la Fig. 5-13.
5) Une fois ce réglage effectué, resserrer la vis (SET SCREW) d'arrêt des GUIDES DE CHARGEMENT.

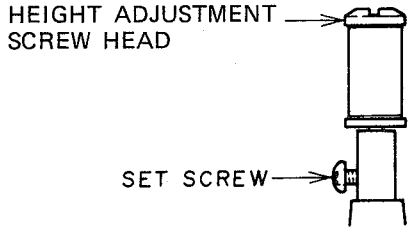


Fig. 5-12

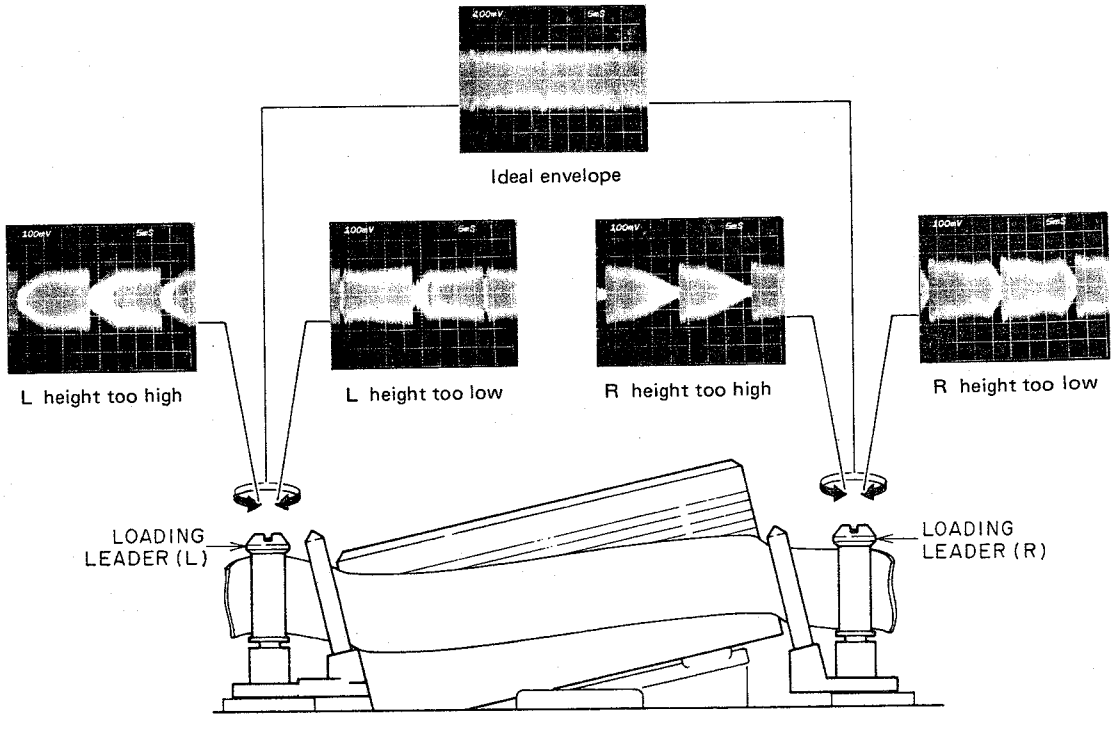


Fig. 5-13

5-2-7. A/C HEAD HEIGHT ADJUSTMENTS

1) Play back the test tape TF-526HH (AT-751788).
2) Connect the oscilloscope CH-1 to AUDIO OUTPUT and CH2 to TP500.
3) Turn the hexagon screw to obtain 1/2 of the output level of either CH1 or CH2 whichever has output signal.

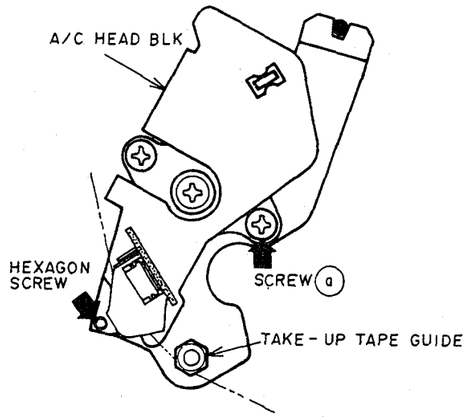


Fig. 5-14

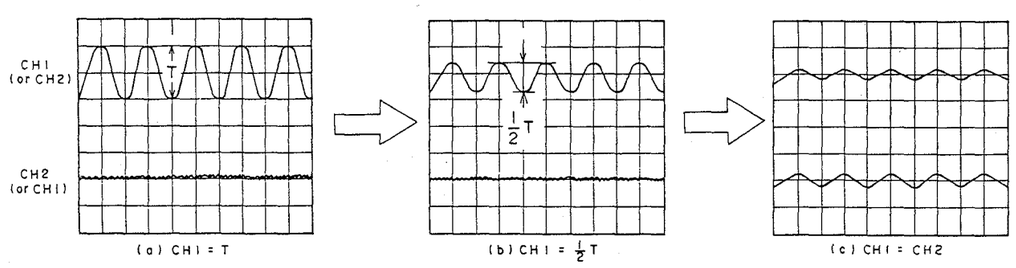


Fig. 5-15

4) Slightly turn the screw ⓐ until the tape edge barely tuches the lower part of the TAKE-UP TAPE GUIDE without any curl as shown in Fig. 5-4.
5) Confirm that both signals of CH1 and CH2 are nearly same level. Repeat the adjustments 3), 4) if it is not nearly same level.

5-2-7. REGLAGE DE LA HAUTEUR DE LA TETE A/C

1) Lire la bande de référence TF-526HH (AT-751788).
2) Connecter un oscilloscope de CH-1 à la sortie audio (TP301) et de CH-2 à TP500.
3) Tourner légèrement la vis à tête hexagonale (HEXAGON SCREW) afin d'obtenir 1/2 du niveau de sortie de CH1 ou CH2.
4) Tourner légèrement la vis ⓐ (SCREW ⓐ) de manière à ce que le board de la bande touche à peine la partie inférieure du guide-bande enrouleur et ne présente aucune ondulation ou pliure de la manière illustrée à la Fig. 5-4.
5) Confirmer que les signaux CH1 et CH2 ont approximativement le même niveau. Dans le cas contraire refaire les opérations 3) et 4).

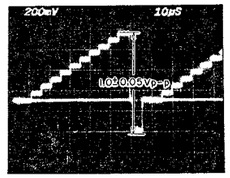
6-1. SERVO & VIDEO ADJUSTMENTS

Precautionary items prior adjustment.
1. The color bar generator output should be 1.0 Vp-p.
2. Video output terminal should be terminated with 75 ohms (dummy load).

Required following Test tapes.

Test tape	Parts No.
TF-512CB	AT-750799
TF-527BL	AT-711880
TF-530RFS	AT-751775

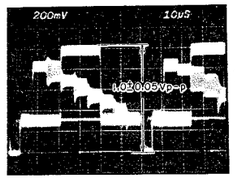
5 VIDEO E-E LEVEL
1. "E-E" (Stop mode) input stair step signal.
2. TP300 (V-OUT) & VR201
3. • Connect oscilloscope to TP300
   • 1.0 ± 0.05 Vp-p



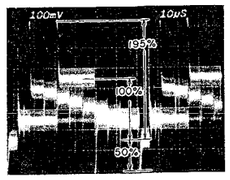
STEP | ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ. part
3. RESULT & REMARKS

ADJ. part → Test point

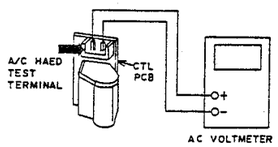
10 REC/PB VIDEO LEVEL
1. "REC" – "PB" SECAM color bar signal.
2. TP300 (V-OUT) & VR200 (PB LEVEL)
3. • Connect oscilloscope to TP300 (V-OUT)
   • 1.0 ± 0.05 Vp-p



8 WHITE & DARK CLIP
1. "REC" SECAM color signal.
2. TP205 (W/D CLIP) & VR205 (W. CLIP), VR204 (D. CLIP)
3. • Connect oscilloscope to TP205 (W/D CLIP)
   • VR205 (WHITE CLIP) . . . 195%
   • VR204 (DARK CLIP) . . . 50%



4 AUDIO REC BIAS
1. "REC" (no signal input)
2. Test terminal on the A/C Head & VR701.
3. • Connect AC voltmeter to test terminal.
   • 2.8 ± 0.1 mV

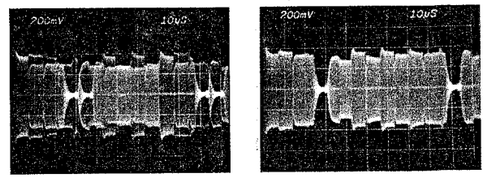


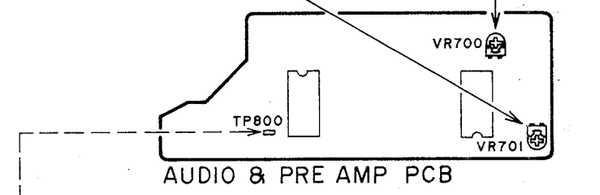
14 VERTICAL STABILITY
1. "PB" → "PAUSE/STILL"
2. Monitor screen & VR209
3. Minimum vibration of still picture.

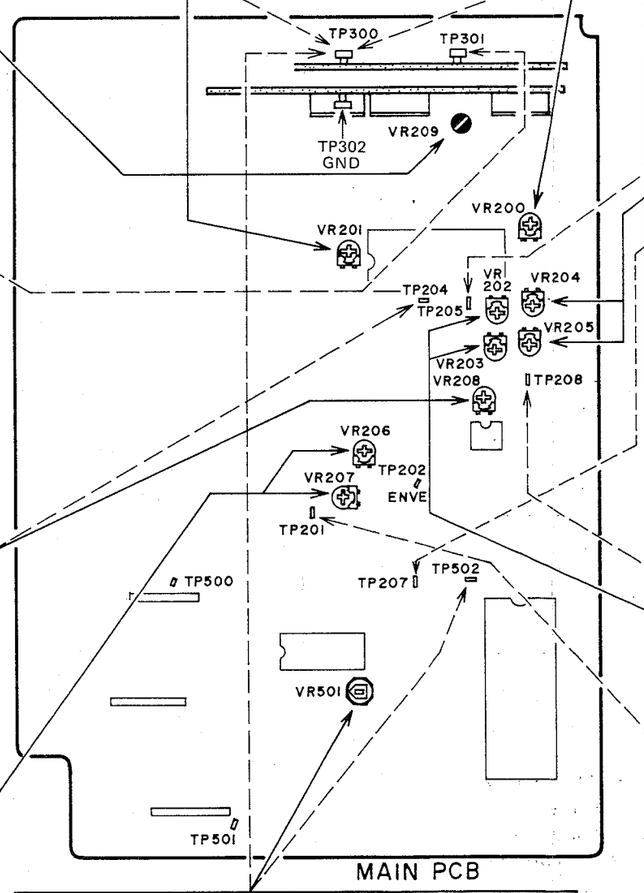
3 AUDIO PB LEVEL
1. "PB" test tape TF-527BL
2. TP301 & VR700
3. • Connect AC voltmeter to AUDIO OUT.
   • –5.0 ± 0.5 dBm

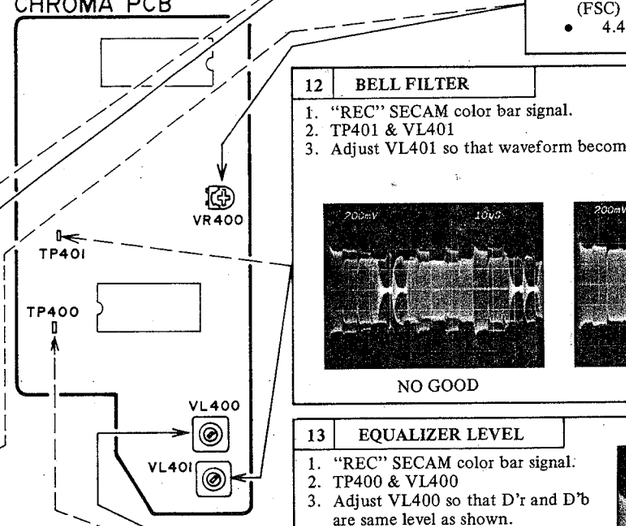
6 FSC
1. "E-E" (Stop mode) input SECAM color bar signal.
2. TP207 (FSC) & VR400
3. • Connect FRQ counter to TP300 (FSC)
   • 4.4 33619 MHz ± 10 Hz

12 BELL FILTER
1. "REC" SECAM color bar signal.
2. TP401 & VL401
3. Adjust VL401 so that waveform become flat as shown.

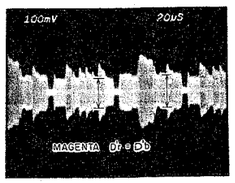




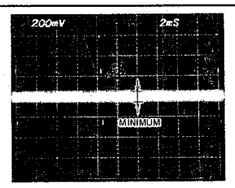




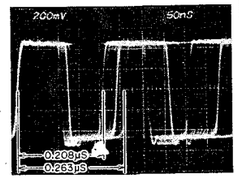
13 EQUALIZER LEVEL
1. "REC" SECAM color bar signal.
2. TP400 & VL400
3. Adjust VL400 so that D'r and D'b are same level as shown.



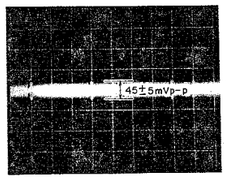
11 CCD
1. "PB" test tape TF-512CB
2. TP204 (CCD) & VR208 (CCD)
3. • Connect oscilloscope to TP204 (CCD).
   • Adjust VR208 so that CCD level becomes minimum.



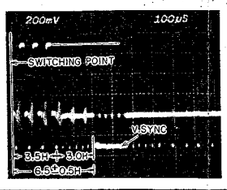
7 CARRIER SET & DEVIATION
1. "REC" SECAM color bar signal.
2. TP208 (REC FM) & VR203 (CARRIER), VR202 (DEVIATION)
3. • Connect oscilloscope to TP208 (REC FM)
   • VR203 (CARRIER) . . . . 0.263μs (3.8 MHz)
   • VR202 (DEVIATION) . . 0.208μs (4.8 MHz)



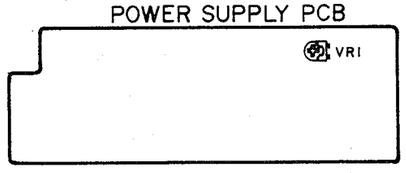
9 VIDEO REC CURRENT
1. "REC" SECAM color bar signal.
2. TP800 (REC I.R) & VR207 (CHROMA), VR206 (Y).
3. • Connect oscilloscope to TP800 (REC I.R)
   • Turn the VR206 (Y) fully counterclockwise.
   • Adjust VR207 (CHROMA) so that chroma REC current becomes 45 ± 5 mVp-p.
   • Adjust VR206 (Y) so that Y REC current becomes 195 ± 5 mVp-p.



2 PB SWITCHING POINT
1. "PB" test tape TF-530RFS
2. TP502 (SWP), TP300 (V-OUT) & VR501
3. • Connect oscilloscope to TP502 (SWP) for triggering and connect to TP300 (V-OUT).
   • Adjust VR501 so that switching point becomes 6.5 ± 0.5 H from the V-SYNC.



1 IDL 5V
1. STOP mode
2. TP201 & VR1
3. • Connect DC voltmeter to TP201.
   • 5 ± 0.05 V DC



6-1. REGLAGE DE CIRCUITS IMPRIMÉS MAIN

Précautions à prendre avant d'effectuer les réglages.

1. La sortie du générateur de barres couleurs doit être de 1,0 Vp-p.
2. La borne de sortie vidéo être bouclée à 75 ohms (fictif ou charge réelle)

Les bondes d'essai suivantes sont reguises.

Bande d'Essai	Nombre Partie
TF-512CB	AT-750799
TF-527BL	AT-711880
TF-530RFS	AT-751775

4 POLARISATION D'ENREGISTREMENT AUDIO

1. "ENR." (pas d'entrée de signaux)
2. Borne d'essai de la tête A/C et VR701.
3. • Connecter un voltmètre CA à la borne d'essai.
   • 2,8 ± 0,1 mV

14 STABILITE VERTICALE

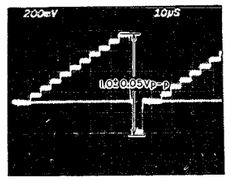
1. "ENR", programme TV et PB/PAUSE
2. Ecran moniteur et VR209.
3. Vibration minimale de l'image arrêtée.

3 NIVEAU AUDIO EN LECTURE

1. "LEC" bande test TF-527BL.
2. TP301 et VR700.
3. • Connecter un voltmètre CA à la sortie audio
   • −5,0 ± 0,5 dBm

5 NIVEAU E-E VIDEO

1. "EE" signal de barre couleur SECAM (Mode arrêt).
2. TP300 (Sortie V) et VR201.
3. • Connecter un oscilloscope à TP300
   • 1,0 ± 0,05 Vp-p

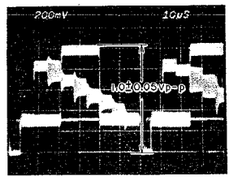


DISPOSITION	POINT DE RÉGLAGE
1. Mode et signal d'entree ou bande d'essai.	1. Point d'essai et pieces de réglage.
2. Résultants et Remarques.	

à pieces de reglage
à point d'essai

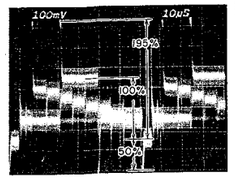
10 NIVEAU VIDEO ENR/LEC

1. "ENR/LEC" signal de barre couleur SECAM.
2. TP300 (SORTIE-V) et VR200 (NIVEAU LEC).
3. • Connecter un oscilloscope à TP300 (SORTIE-V).
   • 1,0 ± 0,05 Vp-p



8 CRETE BLANCHE/NOIRE

1. "ENR" signal couleur SECAM
2. TP205 (CRETE) et VR205 (CRETE B), VR204 (CRETE N)
3. • Connecter un oscilloscope à TP205 (CRETE B/N).
   • VR205 (CRETE BLANCHE) 195%
   • VR204 (CRETE NOIRE) 50%

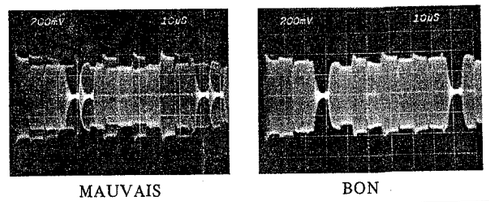


6 FSC

1. "E" signal de barre couleur SECAM d'entrée E-E (Mode arrêt).
2. TP207 (FSC) et VR400.
3. • Connecter un fréquencemètre à TP300 (FSC)
   • 4,4 33619 MHz ± 10 Hz

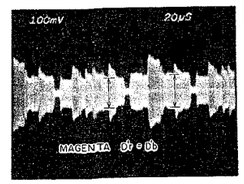
12 FILTRE CLOCHE

1. "ENR" signal de barre couleur SECAM d'enregistrement.
2. TP401 et VL401.
3. Régler VL401 de manière à obtenir une forme d'onde plate comme illustré.



13 NIVEAU EGALISEUR

1. "ENR" signal de barre couleur SECAM d'enregistrement.
2. TP400 et VL400.
3. Régler VL400 afin que D'R et D'B est le même niveau comme illustré.

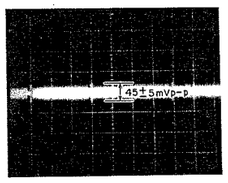


11 CCD

1. "LEC" bande test TF-512CB
2. TP204 (CCD) et VR208 (CCD).
3. • Connecter un oscilloscope à TP204 (CCD).
   • Régler VR208 afin d'obtenir un niveau CCD minimum.

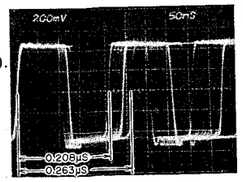
9 COURANT D'ENREGISTREMENT VIDEO

1. "ENR" signal de barre couleur SECAM.
2. TP800 (I.R ENR.) et VR207 (CHROMA), VR206 (Y).
3. • Connecter un oscilloscope à TP800 (I.E ENR.).
   • Tourner VR206 (Y) à fond dans le sens contraire des aiguilles d'une montre.
   • Régler VR207 (CHROMA) de manière à ce que le courant d'enregistrement chroma soit 45 ± 5 mVp-p.
   • Régler VR206 (Y) de manière à ce que le courant d'enregistrement Y soit 195 ± 5 mVp-p.



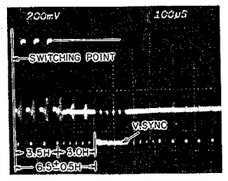
7 DEVIATION ET REGLAGE DE PORTEUSE

1. Signal de barre couleur SECAM d'enregistrement.
2. TP208 (ENR FM) et VR203 (PORTEUSE), VR202 (DEVIATION).
3. • Connecter un oscilloscope à TP208 (ENR FM).
   • VR203 (PORTEUSE) .... 0,263 microsec. (3,8 MHz)
   • VR202 (DEVIATION) .... 0,208 microsec. (4,8 MHz)



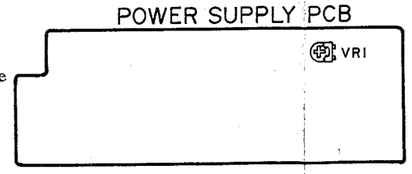
2 POINT DE COMMUTATION EN LECTURE

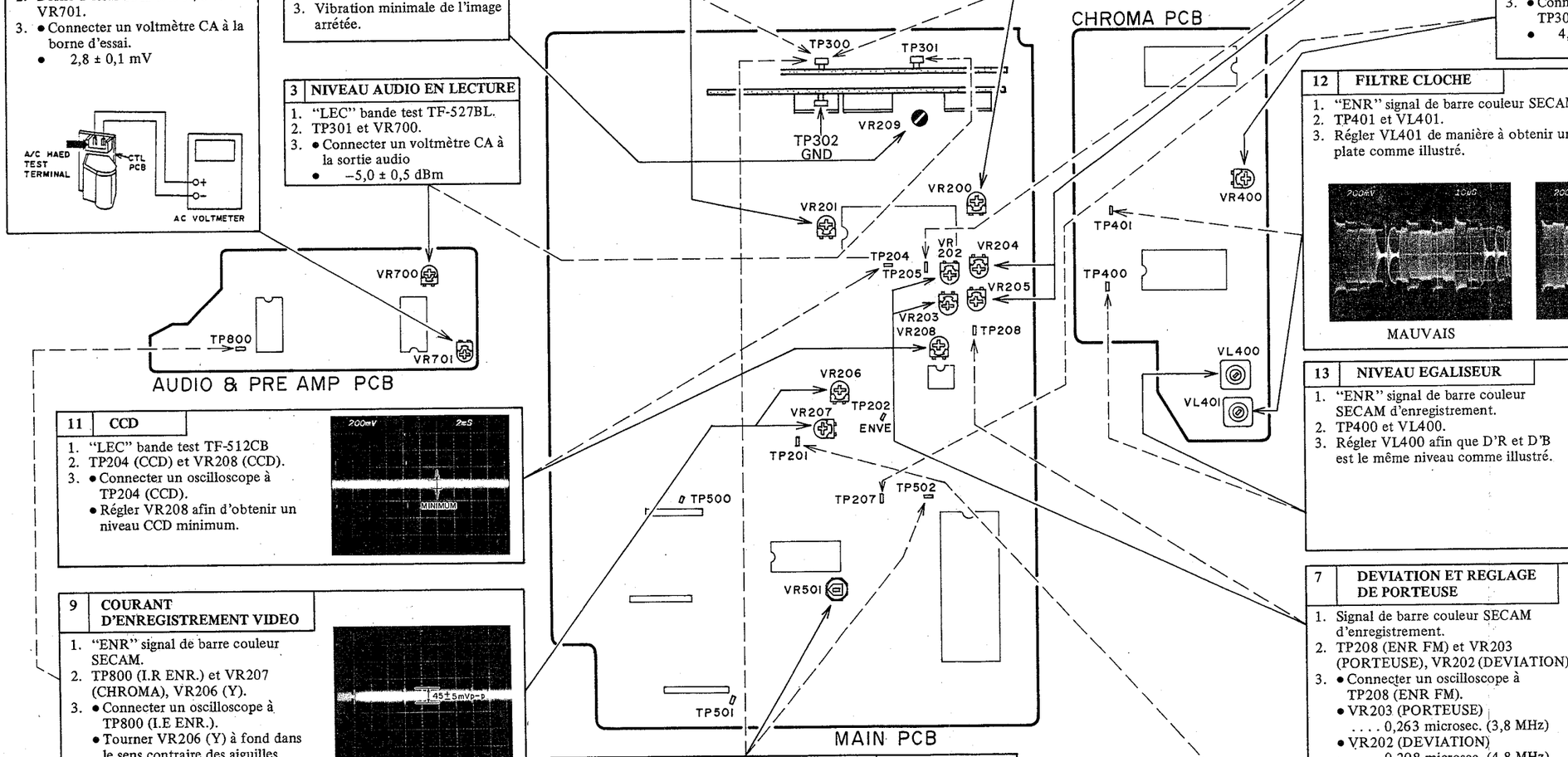
1. "LEC" bande test TF-530RFS.
2. TP502 (PT. COMN.), TP300 (SORTIE-V) et VR501.
3. • Connecter un oscilloscope à TP502 (PT. COMN.) pour le déclenchement et à TP300 (SORTIE-V).
   • Régler VR501 afin que le point de commutation soit à 6,5 ± 0,5 H de V-SYNC.



1 IDL 5V

1. MODE ARRET
2. TP201 et VR1
3. • Connecter un voltmètre CC à TP201.
   • 5 ± 0,05V CC





VII. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.
   a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individ ual parts index number in that figure.

   b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa
[C] : CSA (Canada) Area)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

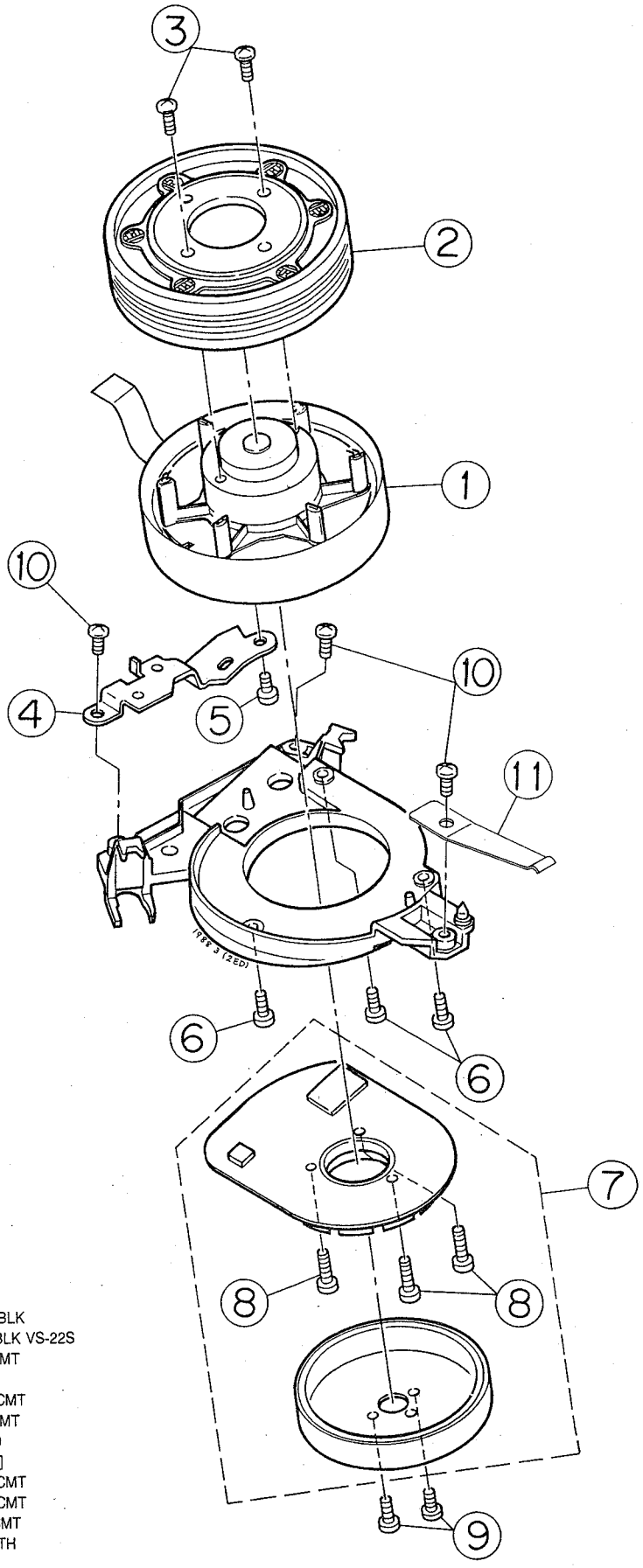
⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BL-V1075A130A	PINCH ROLLER BLK VS-35EA
2	BM-373098	MOTOR DVX-67A2R2 [CAPSTAN MOTOR]
3	BM-367631	MOTOR PART [LOADING MOTOR][M901]
4	BM-M3225A010A	MOTOR SM-250 [DRUM MOTOR]
5	BR-367618	DISK(S)PART
6	BR-367619	DISK(T)PART
7	*BT-380096J1	TRANS POW V1084EO
8	BV-V1075A410C	LOWER DRUM BLK
9	BV-376294	RF CONVERTER MDLK3F063A S
10	BV-V1075A070A	S.LOADING LEADER BLK VS-35EA
11	BV-V1075A080A	T.U LOADING LEADER BLK VS-35EA
12	BV-V1075A420H	UPPER DRUM BLK VS-22S
13	EC-368823	C DBL LAYER EECS5R5H 473Z5.5DC
14	ED-373101	D LED LN59AK INFRARED [SENSOR PCB D1]
15	ED-376111	D LED SE303AC INFRARED
16	ED-383034J	D LED SLR-54PC3F L,M GREEN [QUICK START]
17	ED-360409	D PHOTO PN323B
18	*ED-380089J	D SILICON DFC15TC-FD1 200/1.5A
19	ED-371512	D SILICON ERA22-04Y F05 400/.5
20	ED-344280	D SILICON H GMA-01-FY2 F05
21	ED-307572	D SILICON H 1SS131
22	ED-624903	D SILICON H 1S2473
23	*ED-370990	D SILICON 1SR35-100AHS F10
24	ED-365699	D ZENER H HZS5.6B1J F05
25	ED-346594	D ZENER H HZ3 B3
26	ED-346586	D ZENER H HZ33-3L
27	ED-351419	D ZENER H HZ7B3L
28	ED-346541	D ZENER H HZ9B2L
29	ED-346543	D ZENER H HZ9C1L
30	ED-346546	D ZENER H HZ9C3L
31	EE-375426	TV TUNER TEMQ1-009A
32	EE-380255J	VIF UNIT SECAM
33	*EF-601301	FUSE SEMKO T 250V 2.00A
34	*EF-601942	FUSE SEMKO T 250V 630MA
35	EH-378927J	FILTER LC BP BPF-K5-MS (5969)
36	EH-378856J	FILTER LC BP H287BSKS-9424LHD
37	EH-364066	FILTER LC LP H322LWQ-1166MAD
38	EH-378928J	FILTER LC LP LPF-U5-MD (6231)
39	EH-368821	FILTER LC LP MYV-23R
40	EI-380085J	IC AN3231K
41	EI-379981J1	IC BA10393N
42	EI-367572	IC BA15218
43	EI-373980	IC BA15218N
44	EI-353421	IC BA6229
45	EI-360316	IC BA6305
46	EI-372243	IC BA7107S
47	EI-354095	IC BA718
48	EI-380086J	IC BU2735AS
49	EI-380199J	IC BU4066BL
50	EI-373954	IC CXK1006L
51	EI-373946	IC LA7292
52	EI-378177	IC MB88525-192G LCXSYP3
53	EI-373966	IC MSM6965-3RS
54	EI-379020	IC M50455-073SP
55	EI-346071	IC M5218L-21
56	EI-380090J	IC NJM2352D
57	EI-373955	IC S8053ALR
58	EI-200573	IC TC4053BP
59	EI-367271	IC UPC1490HA
60	EI-380084J	IC UPC2313CA
61	EI-337530	IC UPC574J
62	EI-376112	IC UPD6122G
63	EI-379549	IC UPD75208CW-154 LCXOPF2
64	EI-347991	OSC CE CSA6.00MS 6MHZ
65	EI-376113	OSC CE CSB455EB
66	EI-388110J	OSC CE CST4.19MG 4.194MHZ
67	EI-368825	OSC X'TAL MX-38T 32.768KHZ
68	EI-309878	OSC X'TAL 4.433619MHZ
69	EM-377963	IND FL FV223
70	EO-375471	COIL OSC 1 S033344
71	*ER-378650J	R FUSE H S10 ERQ16NK 1/6W R47J
72	ES-373099	SW LEAF MTS10110MPC1 [REC SAFTY SW][SW1]
73	ES-381310J1	SW MODE SELECTOR D2ZQ-S2-2 [MODE SELECTOR]
74	ES-380116J	SW SLIDE ESD-1112252 2-02-02N [IN PUT SELECT]
75	ES-373973	SW SLIDE HSW0810-010 1-01-02S [N/B-COULEUR]
76	ES-349474	SW TACT SKHHAM004A [TRACKING >]
77	ET-361463	DETECTOR ON2170 Q,R [SENSOR PCB PH1]
78	ET-356336	TR DTA114ES
79	ET-363953	TR DTA114TS
80	ET-360646	TR DTA143ES
81	ET-368836	TR DTA143TA
82	ET-354415	TR DTA144ES
83	ET-373985	TR DTA144TS
84	ET-353897	TR DTC114ES
85	ET-360399	TR DTC114TS
86	ET-354365	TR DTC114YS
87	ET-354371	TR DTC124ES
88	ET-354364	TR DTC143TS
89	ET-354414	TR DTC144ES
90	ET-356236	TR FET 2SK363 GR,BL
91	ET-364064	TR UN4119
92	ET-356224	TR 2SA1286 G,H,J F05
93	ET-353899	TR 2SA1317 S,T,U
94	ET-380630J	TR 2SB1010
95	*ET-356817	TR 2SB891 Q,R
96	ET-321644	TR 2SC1213 C
97	ET-302502	TR 2SC2001 K
98	ET-375777	TR 2SC2926S P,Q
99	*ET-355669	TR 2SC3246 G,H,J F05
100	ET-360137	TR 2SC3330 U,V F05
101	ET-372197	TR 2SC3377 R
102	ET-366168	TR 2SD1292 Q,R
103	*ET-366581	TR 2SD1762 E,F
104	EV-380314J	VR ROTARY RK09K1130 L=** B203 [PICTURE]
105	HE-361456	HEAD E HVFMD0005B [FULL ERASE HEAD]
106	HR-387805J	HEAD COMBO HXMZA1031A [AUDIO/CONTROL]
107	MB-373080	BELT IDLER
108	MB-373096	BELT LOADING
109	ML-373075	ARM LOADING BRAKE
110	ML-367614	ARM MAIN BRAKE(S)PART
111	ML-367616	ARM MAIN BRAKE(TU)PART
112	ML-367617	ARM REVIEW BRAKE PART
113	ML-373043	CLUTCH BLK
114	ML-500881	LEVER TENSION BAND PART
115	MZ-500717T	GEAR CAM CENTER
116	MZ-368797T	GEAR CAM JOINT
117	MZ-500707T1	GEAR CAM TENSION
118	MZ-500715T	GEAR FL DRIVE
119	MZ-V1075A090A	GEAR TOGGLE (S) BLK VS-35EA
120	MZ-V1075A100A	GEAR TOGGLE (TU) BLK VS-35EA
121	MZ-500716T	GEAR WHEEL
122	MZ-367628J1	GEAR WORM PART
123	MZ-368794T	GEAR(S)
124	MZ-368795T1	GEAR(T)
125	VT-367622J2	GUIDE ROLLER PART

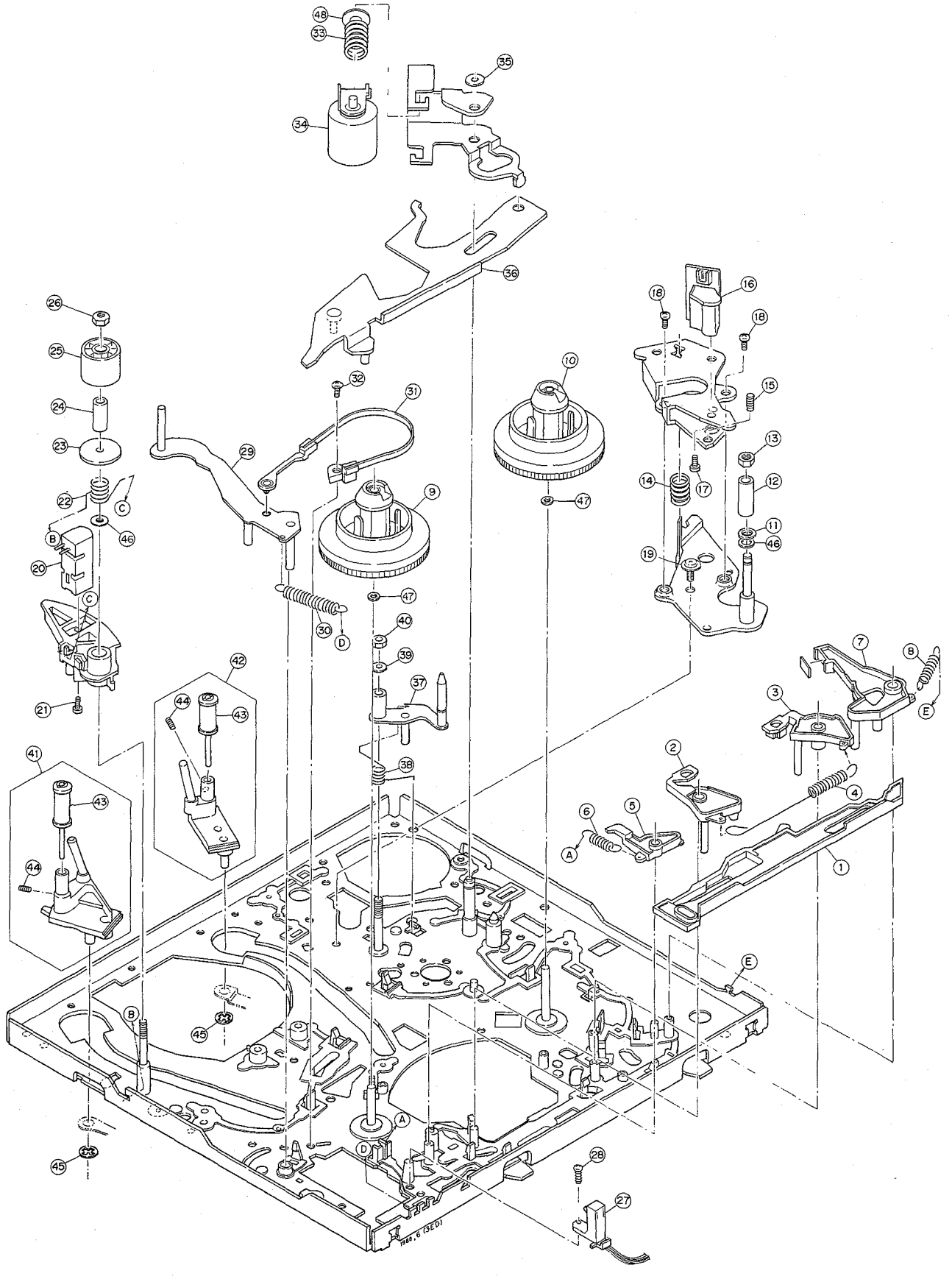
HEAD DRUM BLOCK



2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	BV-V1075A410C	LOWER DRUM BLK
2	BV-V1075A420H	UPPER DRUM BLK VS-22S
3	ZS-321298	BID30X08STL CMT
4	VT-373884J1	PLATE EARTH
5	ZS-479474	PAN26X05STL CMT
6	ZS-563444	BID26X08STL CMT
7	BM-M3225A010A	MOTOR SM-250 [DRUM MOTOR]
8	ZS-467796	PAN26X12STL CMT
9	ZS-479474	PAN26X05STL CMT
10	ZS-413785	BID30X12STL CMT
11	ZG-382137J	SP PLATE EARTH

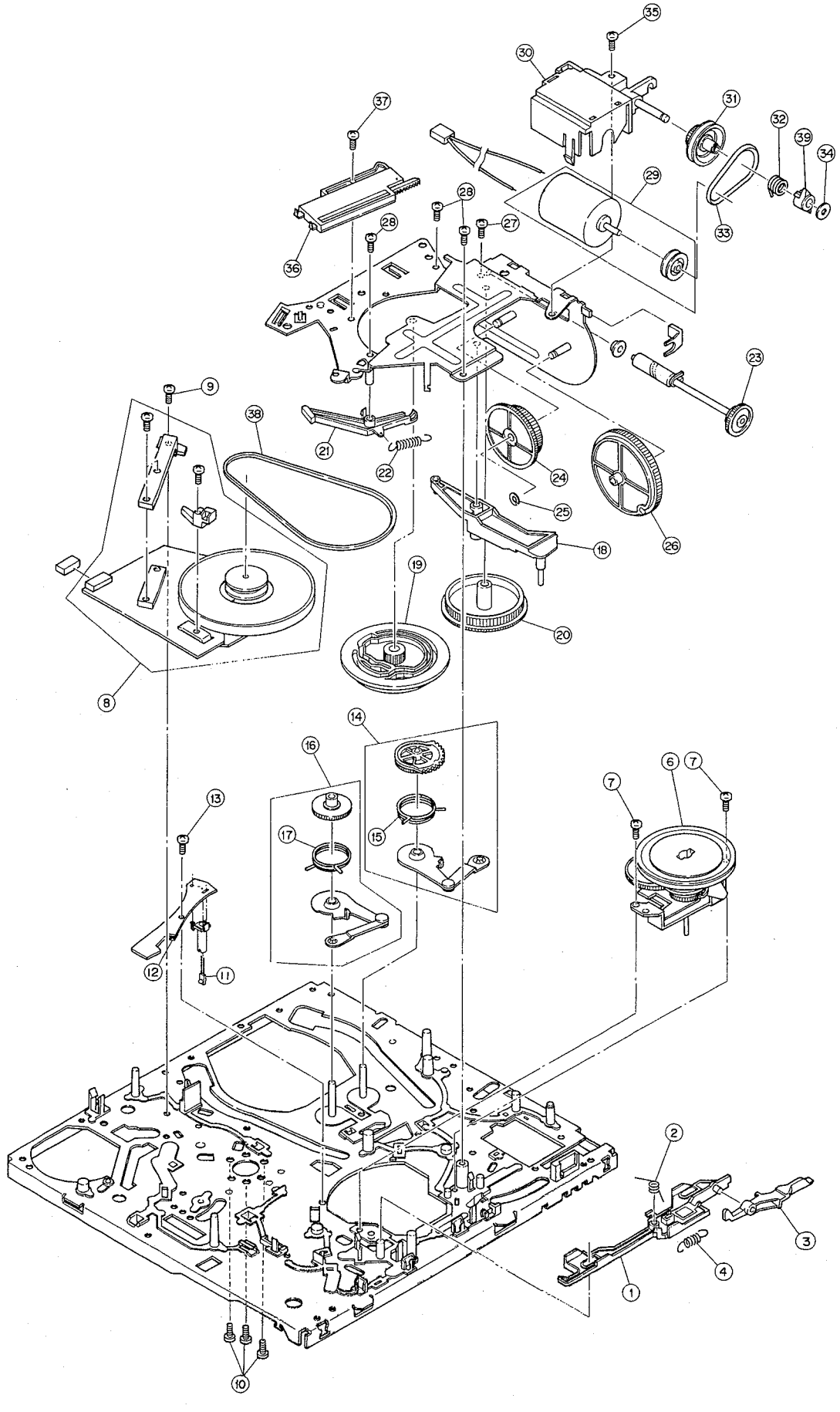
MECHA BLOCK (1)



3. MECHA BLOCK (1)

Ref. No.	Part No.	Description
1	MZ-373079	SLIDER BRAKE
2	ML-367614	ARM MAIN BRAKE(S)PART
3	ML-367616	ARM MAIN BRAKE(TU)PART
4	ZG-373548	SP PULL MAIN BRAKE
5	ML-373075	ARM LOADING BRAKE
6	ZG-373534	SP PULL LOAD BRAKE
7	ML-367617	ARM REVIEW BRAKE PART
8	ZG-373535	SP PULL REVW BRAKE
9	BR-367618	DISK(S)PART
10	BR-367619	DISK(T)PART
11	MS-373095	GUIDE TAPE LCX
12	MS-372186J1	GUIDE TAPE(6)
13	ZW-358045	N30STL CMT 3
14	ZG-500792	SP PUSH A/C
15	ZG-373900	6SET30X080SCM PKR CP
16	HR-387805J	HEAD COMBO HXMZA1031A [AUDIO/CONTROL]
17	ZS-373899	PAN20X2.5STL BDY PS1
18	ZS-321298	BID30X08STL CMT
19	ZS-373896	DT BID30X08STL CMT PW080
20	HE-361456	HEAD E HVFMD0005B [FULL ERASE HEAD]
21	ZS-464703	BID20X04STL CMT
22	ZG-374022	SP TORSION ARM FE
23	ZW-373088	FLANGE Z
24	ZW-373089	SPACER
25	MR-373087	ROLLER Z
26	ZW-350839	N30 NYLON
27	ES-373099	SW LEAF MTS10110MPC1 [REC SAFTY SW][SW1]
28	ZS-321298	BID30X08STL CMT
29	BL-367620-A	ARM TENSION PART
30	ZG-373539	SP PULL TENSION
31	ML-500881	LEVER TENSION BAND PART
32	ZS-373532	DT BID30X08STL CMT C080
33	ZG-382153J	SP PUSH P
34	BL-V1075A130A	PINCH ROLLER BLK VS-35EA
35	ZW-373898	SLIT W31X070X050PSL
36	BL-500879T1	PLATE P SLIDER PART
37	BL-368475	ARM REVIEW GUIDE PART
38	ZG-373530	SP TORSION REVIEW ARM
39	ZW-324417	PW31X060X050PSL
40	ZW-350839	N30 NYLON
41	BV-V1075A070A	S.LOADING LEADER BLK VS-35EA
42	BV-V1075A080A	T.U LOADING LEADER BLK VS-35EA
43	VT-367622J2	GUIDE ROLLER PART
44	ZS-374458	6SET20X030SCM PKR FP
45	ZW-332843	RETAINING RING GRIP 380STL ACP
46	ZW-287458	PW33X060X030BRS NI3
47	ZW-324417	PW31X060X050PSL
48	ZW-292770	PW41X100X050STL CMT

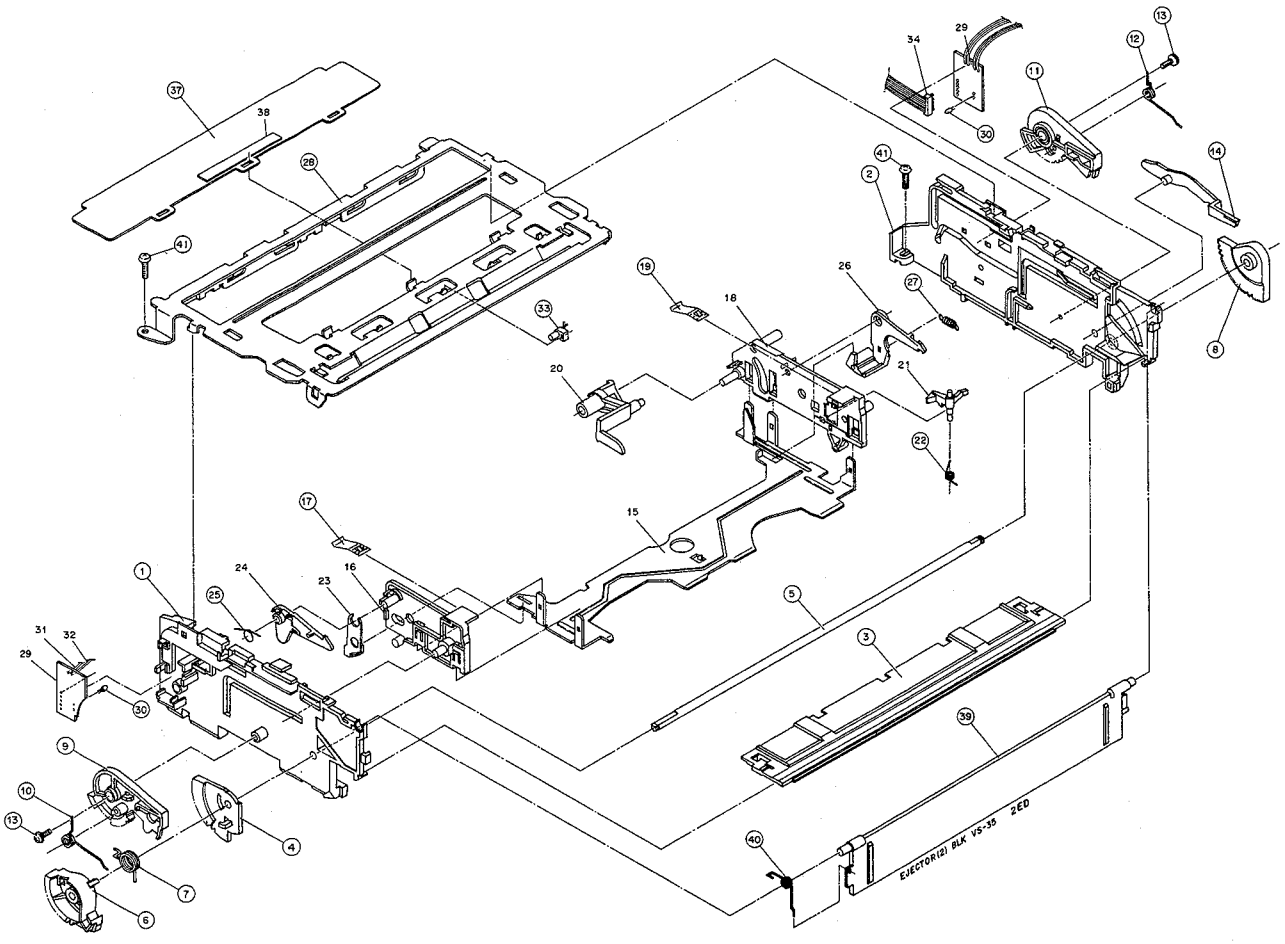
MECHA BLOCK (2)



4. MECHA BLOCK (2)

Ref. No.	Part No.	Description
1	ML-373038	SLIDER FR
2	ZG-373894J1	SP TORSION SLIDER
3	ML-373036	LEVER F/R HOOK
4	ZG-373536	SP PULL HOOK
6	ML-373043	CLUTCH BLK
7	ZS-373895	DT BID26X08STL CMT
8	BM-373098	MOTOR DVX-67A2R2 [CAPSTAN MOTOR]
9	ZS-373895	DT BID26X08STL CMT
10	ZS-419782	BID26X05STL CMT
11	ED-373101	D LED LN59AK INFRARED [SENSOR PCB D1]
12	ET-361463	DETECTOR ON2170 Q,R [SENSOR PCB PH1]
13	ZS-369900	PAN30X08STL CMT TW
14	MZ-V1075A090A	GEAR TOGGLE (S) BLK VS-35EA
15	ZG-373542	SP TORSION GEAR TOGGLE(S)
16	MZ-V1075A100A	GEAR TOGGLE (TU) BLK VS-35EA
17	ZG-373541	SP TORSION GEAR TOGGLE(TU)
18	ML-367625	LEVER CAM SLIDER PART
19	MZ-500717T	GEAR CAM CENTER
20	MZ-500707T1	GEAR CAM TENSION
21	BL-367627	ARM FW BRAKE PART
22	ZG-373546	SP PULL FW BRAKE
23	MZ-367628J1	GEAR WORM PART
24	MZ-500716T	GEAR WHEEL
25	ZW-373898	SLIT W31X070X050PSL
26	MZ-500715T	GEAR FL DRIVE
27	ZS-373895	DT BID26X08STL CMT
28	ZS-373897	PLX BID26X10STL CMT
29	BM-367631	MOTOR PART [LOADING MOTOR][M901]
30	SP-500887T-A	HOUSING MOTOR PART
31	MR-373045	PULLY BELT LOADING
32	ZG-373046J1	SP TORSION TRIGGER
33	MB-373096	BELT LOADING
34	ZW-373901	SLIT W22X060X050PSL
35	ZS-373897	PLX BID26X10STL CMT
36	ES-381310J1	SW MODE SELECTOR D2ZQ-S2-2 [MODE SELECTOR]
37	ZS-373895	DT BID26X08STL CMT
38	MB-373080	BELT IDLER
39	MZ-376267	RING TRIGGER(2)

EJECTOR BLOCK



5. EJECTOR BLOCK

Ref. No.	Part No.	Description
1	MZ-368790T1	HOUSING(S)
2	MZ-368791T2	HOUSING(T)
3	SZ-375956T	GUID F
4	MZ-368794T	GEAR(S)
5	MS-368798T	SHAFT LOADING
6	MZ-368797T	GEAR CAM JOINT
7	ZG-375953T	SP TORSION JOINT
8	MZ-368795T1	GEAR(T)
9	ML-368792T	ARM LOADING(S)
10	ZG-375954T	SP TORSION LOADING(S)
11	ML-368793T	ARM LOADING(T)
12	ZG-375955T	SP TORSION LOADING(T)
13	ZS-368524	PLX BID26X10STL CMT C072

Ref. No.	Part No.	Description
14	ML-500730T	ARM LID OPENER
17	ZG-382450T	SP PLATE HOLDER(2)
19	ZG-382450T	SP PLATE HOLDER(2)
22	ZG-375959T	SP TORSION RELEASE
25	ZG-375957T1	SP TORSION DAMPER
27	ZG-375958T	SP PULL DAMPER
28	MA-368799T	CHASSIS UPPER
30	ET-361490	TR PHOTO PN268 R,S
39	SE-388026J	MASK CASSETTE LL2(F)
40	ZG-500767	SP TORSION MASK
41	ZS-378341	PLX BID30X12STL CMT
42	BV-V1075A240A	TW HOLDER CASSETTE BLK -35EA/TW
43	BV-V1075A205C	TW EJECTOR (2) BLK 9272/TW

6. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-V1085A600A	PC(#) MAIN(SECAM) BLK (VS-22S)
2	BA-V1084D500J	PC(#)POWER BLK VS-22S

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.
- * MAIN P.C BOARD
- * CHROMA P.C BOARD
- * AUDIO & PRE-AMP P.C BOARD
- * OPERATION P.C BOARD
- * PRE-SET P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARD.
- * POWER SUPPLY P.C BOARD
- * TR (1) P.C BOARD
- * TR (2) P.C BOARD

7. MAIN P.C BOARD

Ref. No.	Part No.	Description
C500	EC-368823	C DBL LAYER EECS5R5H 473Z5.5DC
D3	ED-307572	D SILICON H 1SS131
D6	ED-346546	D ZENER H HZ9C3L
D201	ED-624903	D SILICON H 1S2473
D202	ED-307572	D SILICON H 1SS131
D204	ED-307572	D SILICON H 1SS131
D206	ED-307572	D SILICON H 1SS131
D310	ED-307572	D SILICON H 1SS131
D311	ED-307572	D SILICON H 1SS131
D500	ED-307572	D SILICON H 1SS131
D501	ED-307572	D SILICON H 1SS131
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D504	ED-307572	D SILICON H 1SS131
D506	ED-307572	D SILICON H 1SS131
D507	ED-307572	D SILICON H 1SS131
D508	ED-307572	D SILICON H 1SS131
D509	ED-307572	D SILICON H 1SS131
D510	ED-307572	D SILICON H 1SS131
D511	ED-307572	D SILICON H 1SS131
D512	ED-307572	D SILICON H 1SS131
D514	ED-307572	D SILICON H 1SS131
D516	ED-346541	D ZENER H HZ9B2L
D528	ED-307572	D SILICON H 1SS131
D529	ED-365699	D ZENER H HZS5.6B1J F05
D530	ED-307572	D SILICON H 1SS131
FL200	EH-364066	FILTER LC LP H322LWQ-1166MAD
FL202	EH-368821	FILTER LC LP MYV-23R
FR500	ER-336756	R OMF H FS 1W R47J
IB500	EH-378540J	COMP R RGLE5X 103J
IB501	EH-386636J	COMP R RGLE6X 103J
IC1	EI-346071	IC M5218L-21
IC2	EI-337530	IC UPC574J
IC200	EI-380085J	IC AN3231K
IC202	EI-373966	IC MSM6965-3RS
IC500	EI-360316	IC BA6305
IC501	EI-373980	IC BA15218N
IC502	EI-354095	IC BA718
IC503	EI-380086J	IC BU2735AS
IC504	EI-353421	IC BA6229
IC505	EI-373981J1	IC BA10393N
IC506	EI-378177	IC MB88525-192G LCXSYP3
IC507	EI-373980	IC BA15218N
L1	EO-365304	COIL FIX 1 EL0606SKI 1R0J
L2	EO-365304	COIL FIX 1 EL0606SKI 1R0J
L3	EO-365304	COIL FIX 1 EL0606SKI 1R0J
L4	EO-345865	COIL FIX 1 EL0606SKI 100J
L5	EO-365304	COIL FIX 1 EL0606SKI 1R0J
L14	EO-380093J1	COIL FIX 2 C-5294-01 101K
L200	EO-376607	COIL FIX 1 LF-5.0S F05 181K
L201	EO-376602	COIL FIX 1 LF-5.0S F05 121K
L202	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L203	EO-376609	COIL FIX 1 LF-5.0S F05 270K
L204	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L206	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L207	EO-345878	COIL FIX 1 EL0606SKI 680J
L208	EO-376860	COIL FIX 1 LF-5.0S F05 820K
L211	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L212	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L213	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L220	EO-376616	COIL FIX 1 LF-5.0S F05 221K
L221	EO-376602	COIL FIX 1 LF-5.0S F05 121K
L222	EO-376602	COIL FIX 1 LF-5.0S F05 121K
L224	EO-380734J	COIL FIX 1 LF-5.0S F05 6R8K
L500	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L550	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
PJ200	EJ-380205J	PIN J JPJ8322-01-410
SW200	ES-373973	SW SLIDE HSW0810-010 1-01-02S [N/B-COULEUR]
TR1	ET-356224	TR 2SA1286 G,H,J F05
TR2	ET-375777	TR 2SC2926S P,Q
TR3	ET-353899	TR 2SA1317 S,T,U
TR4	ET-353899	TR 2SA1317 S,T,U
TR5	ET-353899	TR 2SA1317 S,T,U
TR6	ET-360137	TR 2SC3330 U,V F05
TR7	ET-321644	TR 2SC1213 C
TR8	ET-360137	TR 2SC3330 U,V F05
TR9	ET-360137	TR 2SC3330 U,V F05
TR10	ET-356236	TR FET 2SK363 GR,BL
TR11	ET-353897	TR DTC114ES
TR13	ET-356224	TR 2SA1286 G,H,J F05
TR14	ET-360646	TR DTA143ES
TR15	*ET-355669	TR 2SC3246 G,H,J F05
TR19	ET-356224	TR 2SA1286 G,H,J F05
TR205	ET-363953	TR DTA114TS
TR206	ET-360137	TR 2SC3330 U,V F05
TR208	ET-360137	TR 2SC3330 U,V F05
TR210	ET-356224	TR 2SA1286 G,H,J F05
TR215	ET-353899	TR 2SA1317 S,T,U
TR221	ET-360137	TR 2SC3330 U,V F05
TR223	ET-354414	TR DTC144ES
TR224	ET-360646	TR DTA143ES
TR225	ET-360399	TR DTC114TS
TR310	ET-354414	TR DTC144ES
TR500	ET-354415	TR DTA144ES
TR501	ET-360137	TR 2SC3330 U,V F05
TR502	ET-373985	TR DTA144TS
TR503	ET-354414	TR DTC144ES
TR504	ET-354414	TR DTC144ES
TR505	ET-354414	TR DTC144ES
TR507	ET-373985	TR DTA144TS
TR508	ET-354371	TR DTC124ES
TR512	ET-373985	TR DTA144TS
TR513	ET-360137	TR 2SC3330 U,V F05
TR514	ET-373985	TR DTA144TS
TR515	ET-353899	TR 2SA1317 S,T,U
TR516	ET-353899	TR 2SA1317 S,T,U
TR517	ET-354365	TR DTC114YS
TR518	ET-354371	TR DTC124ES
TR520	ET-354414	TR DTC144ES
TR521	ET-353899	TR 2SA1317 S,T,U
VR200	EV-358829	R S-FIX H RH0615C 0.10W 223
VR201	EV-358829	R S-FIX H RH0615C 0.10W 223
VR202	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR203	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR204	EV-358829	R S-FIX H RH0615C 0.10W 223
VR205	EV-358829	R S-FIX H RH0615C 0.10W 223
VR206	EV-356579	R S-FIX H RH0615C 0.10W 102
VR207	EV-356576	R S-FIX H RH0615C 0.10W 472
VR208	EV-356583	R S-FIX H RH0615C 0.10W 332
VR209	EV-374014	R S-FIX EVTK-8C 0.20W 104
VR501	EV-378325	R S-FIX H KVSF687A 0.30W 473
X500	EI-347991	OSC CE CSA6.00MS 6MHZ
1	EE-380255J	VIF UNIT SECAM
2	EE-375426	TV TUNER TEMQ1-009A
3	BV-376294	RF CONVERTER MDLK3F063A S

8. CHROMA P.C BOARD

Ref. No.	Part No.	Description
D400	ED-307572	D SILICON H 1SS131
D401	ED-307572	D SILICON H 1SS131
D402	ED-307572	D SILICON H 1SS131
D403	ED-307572	D SILICON H 1SS131
D404	ED-307572	D SILICON H 1SS131
FL400	EH-378927J	FILTER LC BP BPF-K5-MS (5969)
FL401	EH-378928J	FILTER LC LP LPF-U5-MD (6231)
FL402	EH-378856J	FILTER LC BP H287BSKS-9424LHD
IC400	EI-372243	IC BA7107S
IC401	EI-379020	IC M50455-073SP
L400	EO-376605	COIL FIX 1 LF-5.0S F05 151K
L401	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L402	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L403	EO-376603	COIL FIX 1 LF-5.0S F05 150K
L404	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L405	EO-376605	COIL FIX 1 LF-5.0S F05 151K
L406	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L407	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L408	EO-376859	COIL FIX 1 LF-5.0S F05 8R2K
L409	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
TR400	ET-360137	TR 2SC3330 U,V F05
TR401	ET-364064	TR UN4119
TR402	ET-354415	TR DTA144ES
TR403	ET-353897	TR DTC114ES
TR404	ET-353897	TR DTC114ES
TR405	ET-360137	TR 2SC3330 U,V F05
TR406	ET-360137	TR 2SC3330 U,V F05
TR407	ET-360137	TR 2SC3330 U,V F05
TR408	ET-360137	TR 2SC3330 U,V F05
TR409	ET-360137	TR 2SC3330 U,V F05
TR411	ET-353899	TR 2SA1317 S,T,U
VL400	EO-364063	COIL VARI 1 F291CNS-0665BS
VL401	EO-364062	COIL VARI 1 F291CNS-0666GW
VR400	EV-380253J	R S-FIX H KVSF687A 0.30W 223
X400	EI-309878	OSC X'TAL 4.433619MHZ

9. AUDIO & PRE-AMP P.C BOARD

Ref. No.	Part No.	Description
D700	ED-307572	D SILICON H 1SS131
D701	ED-307572	D SILICON H 1SS131
FL700	EO-375471	COIL OSC 1 S033344
IC700	EI-373946	IC LA7292
IC800	EI-380084J	IC UPC2313CA
L700	EO-382618J	COIL FIX 1 FL07H 272K
L701	EO-382619J	COIL FIX 1 EL0607SKI F05 472J
L802	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L804	EO-376606	COIL FIX 1 LF-5.0S F05 180K
L805	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L806	EO-376612	COIL FIX 1 LF-5.0S F05 680K
L807	EO-345887	COIL FIX 1 EL0606SKI 221J
L808	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
P800	EJ-373949	SOCKET 5597-08CPB 8P
TR700	ET-360137	TR 2SC3330 U,V F05
TR801	ET-360137	TR 2SC3330 U,V F05
TR802	ET-360137	TR 2SC3330 U,V F05
TR803	ET-356224	TR 2SA1286 G,H,J F05
VR700	EV-356577	R S-FIX H RH0615C 0.10W 103
VR701	EV-356582	R S-FIX H RH0615C 0.10W 473

10. OPERATION P.C BOARD

Ref. No.	Part No.	Description
D900	ED-307572	D SILICON H 1SS131
D901	ED-307572	D SILICON H 1SS131
D902	ED-307572	D SILICON H 1SS131
D903	ED-307572	D SILICON H 1SS131
D904	ED-307572	D SILICON H 1SS131
D905	ED-307572	D SILICON H 1SS131
D906	ED-307572	D SILICON H 1SS131
D907	ED-307572	D SILICON H 1SS131
D908	ED-307572	D SILICON H 1SS131
D912	ED-307572	D SILICON H 1SS131
D913	ED-307572	D SILICON H 1SS131
D915	ED-307572	D SILICON H 1SS131
D916	ED-346543	D ZENER H HZ9C1L
D917	ED-383034J	D LED SLR-54PC3F L,M GREEN [QUICK START]
D918	ED-383034J	D LED SLR-54PC3F L,M GREEN [QUICK START]
D919	ED-351419	D ZENER H HZ7B3L
D920	ED-360409	D PHOTO PN323B
D921	ED-307572	D SILICON H 1SS131
FL900	EM-377963	IND FL FV223
IB900	EH-378541J	COMP R RGLE3X 473J
IB901	EH-383057J	COMP R RGLE5X 473J
IC901	EI-379549	IC UPD75208CW-154 LCXOPF2
IC902	EI-373955	IC S8053ALR
IC903	EI-373954	IC CXK1006L
IC904	EI-367271	IC UPC1490HA
L900	EO-376600	COIL FIX 1 LF-5.0S F05 101K
L901	EO-376616	COIL FIX 1 LF-5.0S F05 221K
SW900	ES-349474	SW TACT SKHHAM004A [TRACKING >]
SW901	ES-349474	SW TACT SKHHAM004A [TRACKING <]
SW902	ES-349474	SW TACT SKHHAM004A [QUICK TIMER STOP]
SW903	ES-349474	SW TACT SKHHAM004A [QUICK TIMER-M]
SW904	ES-349474	SW TACT SKHHAM004A [REC]
SW905	ES-349474	SW TACT SKHHAM004A [STILL]
SW906	ES-349474	SW TACT SKHHAM004A [REW]
SW907	ES-349474	SW TACT SKHHAM004A [CH UP]
SW908	ES-349474	SW TACT SKHHAM004A [TIMER]
SW909	ES-349474	SW TACT SKHHAM004A [STOP]
SW910	ES-349474	SW TACT SKHHAM004A [FF]
SW911	ES-349474	SW TACT SKHHAM004A [POWER]
SW912	ES-349474	SW TACT SKHHAM004A [QUICK TIMER-H]
SW913	ES-349474	SW TACT SKHHAM004A [CH DOWN]
SW914	ES-349474	SW TACT SKHHAM004A [PLAY]
SW915	ES-349474	SW TACT SKHHAM004A [SLOW]
SW916	ES-349474	SW TACT SKHHAM004A [EJECT]
SW918	ES-380116J	SW SLIDE ESD-1112252 2-02-02N [IN PUT SELECT]
SW919	ES-380116J	SW SLIDE ESD-1112252 2-02-02N [EDIT ON/OFF]
TR900	ET-354414	TR DTC144ES
TR901	ET-354414	TR DTC144ES
TR902	ET-354414	TR DTC144ES
TR903	ET-354414	TR DTC144ES
TR904	ET-368836	TR DTA143TA
TR906	ET-354414	TR DTC144ES
TR907	ET-354364	TR DTC143TS
TR908	ET-354364	TR DTC143TS
TR909	ET-354364	TR DTC143TS

Ref. No.	Part No.	Description
VR900	EV-380314J	VR ROTARY RK09K1130 L=** B203 [PICTURE]
X900	EI-388110J	OSC CE CST4.19MG 4.194MHZ
X901	EI-368825	OSC X'TAL MX-38T 32.768KHZ

11. PRE-SET P.C BOARD

Ref. No.	Part No.	Description
D950	ED-382358J	D LED SLR34PC 3F K,L,M GREEN [AFC/MEMO]
D951	ED-307572	D SILICON H 1SS131
D952	ED-307572	D SILICON H 1SS131
D953	ED-307572	D SILICON H 1SS131
D954	ED-307572	D SILICON H 1SS131
D955	ED-307572	D SILICON H 1SS131
SW951	ES-349474	SW TACT SKHHAM004A [FAST -]
SW952	ES-349474	SW TACT SKHHAM004A [FAST +]
SW953	ES-349474	SW TACT SKHHAM004A [BAND]
SW954	ES-349474	SW TACT SKHHAM004A [SLOW -]
SW955	ES-349474	SW TACT SKHHAM004A [SLOW +]
SW956	ES-349474	SW TACT SKHHAM004A [MEMO]
SW957	ES-380117J	SW SLIDE ESD-1111352 2-01-03N [PRE-SET]

12. POWER SUPPLY P.C BOARD

Ref. No.	Part No.	Description
C1	EC-355371	C CE V DNS472ZV V 472Z 400AC
C2	EC-363491	C EC V CUT SME 222M 25.0DC
C3	EC-366613	C EC V CUT SME 102M 25.0DC
D1	*ED-370990	D SILICON 1SR35-100AHS F10
D2	*ED-370990	D SILICON 1SR35-100AHS F10
D3	*ED-370990	D SILICON 1SR35-100AHS F10
D4	*ED-370990	D SILICON 1SR35-100AHS F10
D5	*ED-370990	D SILICON 1SR35-100AHS F10
D6	*ED-370990	D SILICON 1SR35-100AHS F10
D7	*ED-370990	D SILICON 1SR35-100AHS F10
D8	*ED-370990	D SILICON 1SR35-100AHS F10
D9	*ED-380089J	D SILICON DFC15TC-FD1 200/1.5A
D10	*ED-307572	D SILICON H 1SS131
D11	*ED-624903	D SILICON H 1S2473
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
D16	ED-307572	D SILICON H 1SS131
D17	ED-307572	D SILICON H 1SS131
D18	ED-624903	D SILICON H 1S2473
D19	ED-346586	D ZENER H HZ33-3L
D20	ED-346594	D ZENER H HZ3 B3
D21	ED-371512	D SILICON ERA22-04Y F05 400/.5
D23	ED-307572	D SILICON H 1SS131
FR1	*ER-378650J	R FUSE H S10 ERQ16NK 1/6W R47J
FR2	*ER-378650J	R FUSE H S10 ERQ16NK 1/6W R47J
IC1	EI-380090J	IC NJM2352D
IC2	EI-367572	IC BA15218
L3	EO-389177J	COIL FIX 2 PC10 101K
L4	EO-382264T	COIL FIX 2 EF1950 560K
L5	EO-382264T	COIL FIX 2 EF1950 560K
L6	EO-380093J1	COIL FIX 2 C-5294-01 101K
L7	EO-382264T	COIL FIX 2 EF1950 560K
L8	EO-349560	COIL FIX 1 FL09H 122J
R18	ER-367505	R OMF H S12 FS 1W 102J
TR1	*ET-356817	TR 2SB891 Q,R
TR3	ET-372197	TR 2SC3377 R
TR4	ET-360137	TR 2SC3330 U,V F05
TR6	ET-360137	TR 2SC3330 U,V F05
TR7	*ET-356817	TR 2SB891 Q,R
TR8	ET-356336	TR DTA114ES
TR9	ET-354364	TR DTC143TS
TR10	ET-354364	TR DTC143TS
TR11	*ET-356817	TR 2SB891 Q,R
TR12	ET-366168	TR 2SD1292 Q,R
TR13	ET-353899	TR 2SA1317 S,T,U
TR15	ET-380630J	TR 2SB1010
VR1	EV-356579	R S-FIX H RH0615C 0.10W 102
T1	*BT-380096J1	TRANS POW V1084EO
F1	*EF-601942	FUSE SEMKO T 250V 630MA
F2	*EF-601301	FUSE SEMKO T 250V 2.00A

13. TR (1) P.C BOARD

Ref. No.	Part No.	Description
TR2	*ET-366581	TR 2SD1762 E,F

14. TR (2) P.C BOARD

Ref. No.	Part No.	Description
TR5	*ET-366581	TR 2SD1762 E,F

15. 21 PIN (A) P.C BOARD

Ref. No.	Part No.	Description
C339	EC-378664J	C EC V CUT SME 102M 6.3DC
D300	ED-307572	D SILICON H 1SS131
D302	ED-307572	D SILICON H 1SS131
IC300	EI-200573	IC TC4053BP
IC301	EI-380199J	IC BU4066BL
IC302	EI-380199J	IC BU4066BL
IC303	EI-200573	IC TC4053BP
L300	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L301	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L302	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L303	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L305	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
TR308	ET-353899	TR 2SA1317 S,T,U
TR309	ET-360137	TR 2SC3330 U,V F05
TR310	ET-353899	TR 2SA1317 S,T,U
TR311	ET-353899	TR 2SA1317 S,T,U
TR312	ET-353899	TR 2SA1317 S,T,U
TR313	ET-360137	TR 2SC3330 U,V F05
TR314	ET-353899	TR 2SA1317 S,T,U
TR315	ET-360137	TR 2SC3330 U,V F05
TR317	ET-353899	TR 2SA1317 S,T,U
TR318	ET-354414	TR DTC144ES
TR319	ET-360137	TR 2SC3330 U,V F05
TR320	ET-360137	TR 2SC3330 U,V F05
TR321	ET-360137	TR 2SC3330 U,V F05
TR322	ET-353899	TR 2SA1317 S,T,U
TR323	ET-360137	TR 2SC3330 U,V F05
TR325	ET-360137	TR 2SC3330 U,V F05

16. 21 PIN (B) P.C BOARD

Ref. No.	Part No.	Description
D301	ED-307572	D SILICON H 1SS131
D303	ED-307572	D SILICON H 1SS131
D304	ED-307572	D SILICON H 1SS131
P300	EJ-372242	SOCKET HXC 1521-01-010 21P
P301	EJ-380273J	SOCKET HXC1521-01-030 21P
TR300	ET-353899	TR 2SA1317 S,T,U
TR301	ET-353899	TR 2SA1317 S,T,U
TR302	ET-360137	TR 2SC3330 U,V F05
TR303	ET-360137	TR 2SC3330 U,V F05
TR304	ET-360137	TR 2SC3330 U,V F05
TR305	ET-353899	TR 2SA1317 S,T,U
TR306	ET-353899	TR 2SA1317 S,T,U
TR307	ET-360137	TR 2SC3330 U,V F05
TR316	ET-360137	TR 2SC3330 U,V F05
TR324	ET-354415	TR DTA144ES
1	SP-377985T	PANEL REAR JACK S
2	ZS-362378	PLX BID30X10STL CMT
3	ZS-373897	PLX BID26X10STL CMT

17. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	BD-V1085B300E	PANEL FRONT BLK (VS-20S-B)
2	SZ-375320J1	LATCH DOOR
3	SP-383157J	DOOR FRONT LL2(F) B
4	ZZ-382433J	LABEL PRESET(L) OEM S
5	ZS-362378	PLX BID30X10STL CMT
6	SA-353927B	F00T(2)
7	ZS-364545	DT BID30X08STL CMT
8	ZS-362378	PLX BID30X10STL CMT
9	ZS-368547	PLX BID30X06STL CMT
10	SP-500772	COVER UPPER B
11	ZS-374023	DT BID26X08STL BNI
12	*EW-371933	AC CORD200 KP419LTCE B100 A EV
13	TC-376182	PAD COVER BOTTOM
14	ZS-373962	PLX BID40X10STL CMT (TRANS POWER FIX)

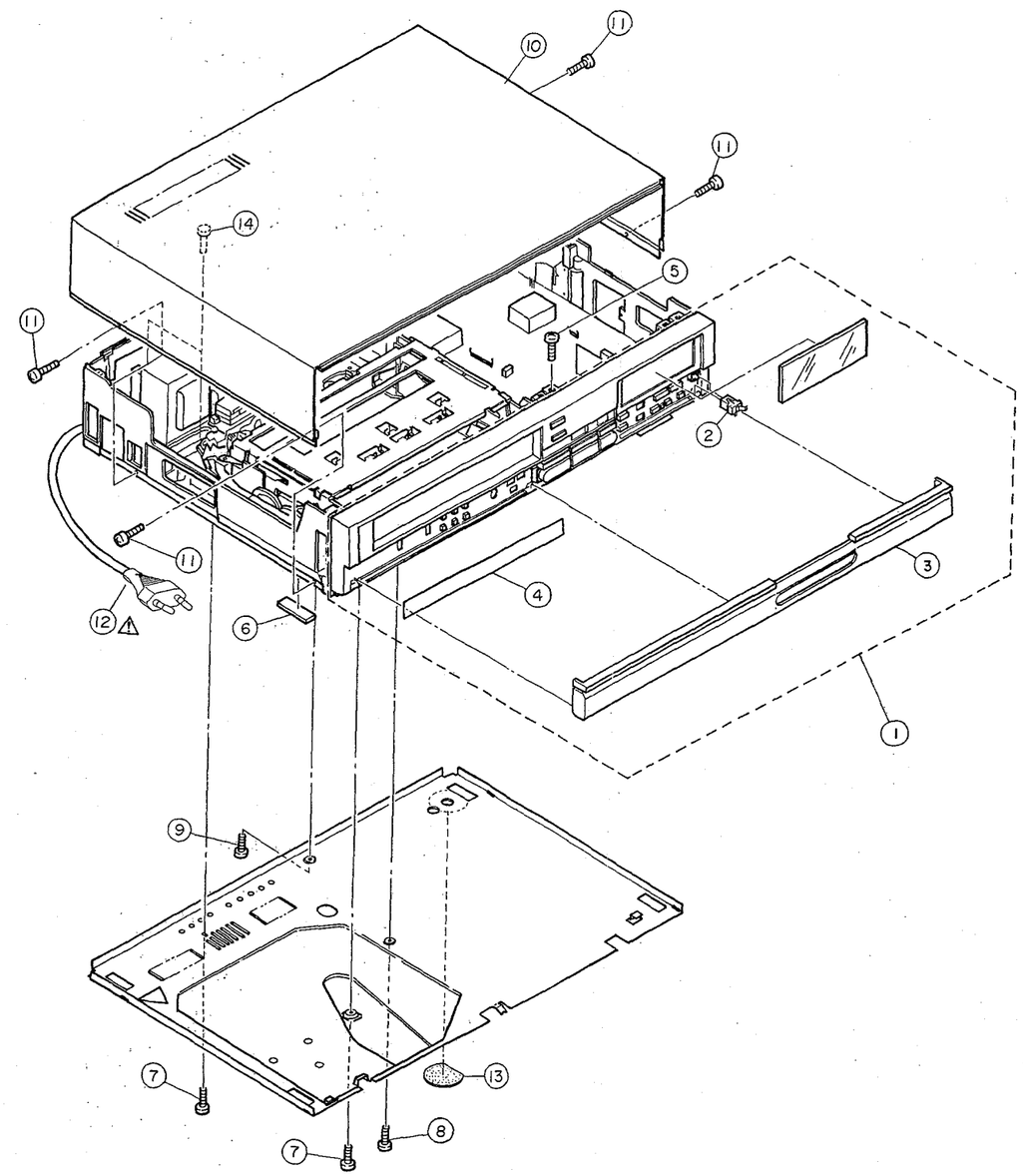
18. ACCESSORY

Ref. No.	Part No.	Description
1	AV-348415	CORD SECAM
2	AX-N4003B010B	LLX REMOCON BLK RC-V22A-FB

19. REMOTE CONTROL UNIT RC-V22

Ref. No.	Part No.	Description
D1	ED-376111	D LED SE303AC INFRARED
D2	ED-344280	D SILICON H GMA-01-FY2 F05
D3	ED-344280	D SILICON H GMA-01-FY2 F05
D4	ED-344280	D SILICON H GMA-01-FY2 F05
IC1	EI-376112	IC UPD6122G
TR1	ET-302502	TR 2SC2001 K
X1	EI-376113	OSC CE CSB455EB
1	ZG-375530	TERMINAL BATTERY(A)
2	ZG-375531	TERMINAL BATTERY(B)
3	ZG-375532	TERMINAL BATTERY(C)
4	SC-375525A	COVER BATTERY(B)
5	SC-375526E	COVER PROGRAM E
6	ZS-367675	PT CTS20X06STL CMT

FINAL ASSEMBLY BLOCK



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AX-N4003B010B	18-2	ED-307572	10-D915	EH-378856J	8-FL402	EO-365304	7-L1
BA-V1084D500J	6-2	ED-307572	10-D921	EH-378927J	1-35	EO-365304	7-L2
BA-V1085A600A	6-1	ED-307572	11-D951	EH-378927J	8-FL400	EO-365304	7-L3
BD-V1085B300E	17-1	ED-307572	11-D952	EH-378928J	1-38	EO-365304	7-L5
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BL-367627	4-21	ED-307572	11-D954	EH-383057J	10-IB901	EO-375471	9-FL700
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BL-500879T1	3-36	ED-307572	12-D10	EI-200573	1-58	EO-376179	7-L204
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BL-V1075A130A	3-34	ED-307572	12-D13	EI-200573	15-IC303	EO-376179	7-L211
BM-367631	1-3	ED-307572	12-D14	EI-309878	1-68	EO-376179	7-L212
BM-367631	4-29	ED-307572	12-D15	EI-309878	8-X400	EO-376179	7-L213
BM-373098	1-2	ED-307572	12-D16	EI-337530	1-61	EO-376179	7-L500
BM-373098	4-8	ED-307572	12-D17	EI-337530	7-IC2	EO-376179	7-L550
BM-M3225A010A	1-4	ED-307572	12-D23	EI-346071	1-55	EO-376179	8-L401
BM-M3225A010A	2-7	ED-307572	15-D300	EI-346071	7-IC1	EO-376179	8-L402
BR-367618	1-5	ED-307572	15-D302	EI-347991	1-64	EO-376179	8-L404
BR-367618	3-9	ED-307572	16-D301	EI-347991	7-X500	EO-376179	8-L406
BR-367619	1-6	ED-307572	16-D303	EI-353421	1-44	EO-376179	8-L407
BR-367619	3-10	ED-307572	16-D304	EI-353421	7-IC504	EO-376179	8-L409
BT-380096J1	1-7	ED-344280	1-20	EI-354095	1-47	EO-376179	9-L805
BT-380096J1	12-T1	ED-344280	19-D2	EI-354095	7-IC502	EO-376179	9-L808
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BV-376294	7-3	ED-344280	19-D4	EI-360316	7-IC500	EO-376179	15-L305
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BV-V1075A070A	3-41	ED-346541	7-D516	EI-367271	10-IC904	EO-376602	7-L201
BV-V1075A080A	1-11	ED-346543	1-29	EI-367572	1-42	EO-376602	7-L221
BV-V1075A080A	3-42	ED-346543	10-D916	EI-367572	12-IC2	EO-376602	7-L222
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BV-V1075A410C	1-8	ED-346586	1-26	EI-372243	1-46	EO-376605	8-L405
BV-V1075A410C	2-1	ED-346586	12-D19	EI-372243	8-IC400	EO-376606	9-L804
BV-V1075A420H	1-12	ED-346594	1-25	EI-373946	1-51	EO-376607	7-L200
BV-V1075A420H	2-2	ED-346594	12-D20	EI-373946	9-IC700	EO-376609	7-L203
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EC-366613	12-C3	ED-360409	1-17	EI-373955	1-57	EO-376610	15-L301
EC-368823	1-13	ED-360409	10-D920	EI-373955	10-IC902	EO-376611	15-L302
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ED-307572	7-D310	ED-370990	12-D5	EI-376112	1-62	EO-380734J	7-L224
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ED-307572	7-D500	ED-370990	12-D7	EI-376113	1-65	EO-382264T	12-L5
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ED-307572	7-D502	ED-371512	1-19	EI-378177	1-52	EO-382618J	9-L700
ED-307572	7-D503	ED-371512	12-D21	EI-378177	7-IC506	EO-382619J	9-L701
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ED-307572	7-D530	ED-624903	1-22	EI-380090J	1-56	ES-349474	10-SW903
ED-307572	8-D400	ED-624903	7-D201	EI-380090J	12-IC1	ES-349474	10-SW904
ED-307572	8-D401	ED-624903	12-D11	EI-380199J	1-49	ES-349474	10-SW905
ED-307572	8-D402	ED-624903	12-D18	EI-380199J	15-IC301	ES-349474	10-SW906
ED-307572	8-D403	EE-375426	1-31	EI-380199J	15-IC302	ES-349474	10-SW907
ED-307572	8-D404	EE-375426	7-2	EI-388110J	1-66	ES-349474	10-SW908
ED-307572	9-D700	EE-380255J	1-32	EI-388110J	10-X900	ES-349474	10-SW909
ED-307572	9-D701	EE-380255J	7-1	EJ-372242	16-P300	ES-349474	10-SW910
ED-307572	10-D900	EF-601301	1-33	EJ-373949	9-P800	ES-349474	10-SW911
ED-307572	10-D901	EF-601301	12-F2	EJ-380205J	7-PJ200	ES-349474	10-SW912
ED-307572	10-D902	EF-601942	1-34	EJ-380273J	16-P301	ES-349474	10-SW913
ED-307572	10-D903	EF-601942	12-F1	EM-377963	1-69	ES-349474	10-SW914
ED-307572	10-D904	EH-364066	1-37	EM-377963	10-FL900	ES-349474	10-SW915
ED-307572	10-D905	EH-364066	7-FL200	EO-345865	7-L4	ES-349474	10-SW916
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ED-307572	10-D907	EH-368821	7-FL202	EO-345887	9-L807	ES-349474	11-SW952
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ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Auto Color Control
A/C	Audio and Control
ADJ	ADJust(ment)
AFC	Auto Frequency Control
AFT	Auto Fine Turning
AGC	Auto Gain Control
AH(P)	Audio Head (Play Back)
AH(R)	Audio Head (Record)
AL	ALl
AL	ALways
ALC	Auto Level Control
A-SW·P	Audio-SWitching · Pulse
A·MUTE	Audio MUTE
AUT/MAN	AUTO/MANual
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLacK or BLocK
BM	Balanced Modulator
BPF	Band Pass Filter
BS	Band Select
BU	Back Up
B/W	Black and White
C	Chroma
CCIR	Comité Consultatif International des Radio Communications
CH (Ch.)	CHannel (Channel) or CHroma
CK	Color Killer
CLK	CLocK
CLP	CLiP
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
Comp	Comparison
C or R	Cue or Review
CR 1	Cue Review 1 (high)
CSW	Cassette SWitch
C SYNC	Composite SYNC
CTL	ConTroL
CUE	CUE
CW	Carrier Wave
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETect (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D·P·E	Drum·Phase·Error
D·PG	Drum·Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig.	Figure
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
FSI	Field Start Inhibit
GND	GrouND
H	Horizontal
HP	Horizontal (sync) Pulse
HPF	High Pass Filter
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
INS	INSert
INV	INVerter
L	Left
L·CTL	Lamp·ConTroL
LED	Light Emitting Diode
LIM	LIMitter

ABBREVIATION	EXPLANATION
LM	Loading Motor
LM STP	Loading Motor SToP
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi
MOD	MODulator
MRS	Motor ReverSe
NG	Noise Gate
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
O MUTE	Output MUTE
OSC	OSCillator
PAL	Phase Alternation Line
PB	Play Back
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
PL, PLG	PLunger (PLunGer)
POS	POSition
PRG	PRoGram
P & S	Power supply & System control
PU	Pick Up (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
R·S SW	Record·Safety SWitch
RST (RES)	ReSeT (RESet)
RVS	ReVerSe
S	Sensor, Shield
SC	SimulCast
S CLK	Serial CLocK
SECAM	Séquentiel à Memoire
SET (SEPA)	SEParator (SEPArator)
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TA-MUTE	Tuner Audio MUTE
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated
V	Vertical or Video
VCO	Voltage Controlled Oscillator
VD	Vertical Drive
VF	Voltage for Fine tuning
VHF	Very High Frequency
VHS	Video Home System
VID	VIDeo
VIDEO-J	VIDEO Judge
VIF	Video Intermediate Frequency
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VT	Voltage for Tuning
WHT	WHiTe
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
SERVICE DEPARTMENT TEL: TOKYO (745)9884 TELEX: J26261
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AKAI

MODEL VS-20S

SCHEMATIC DIAGRAMS AND PC BOARDS

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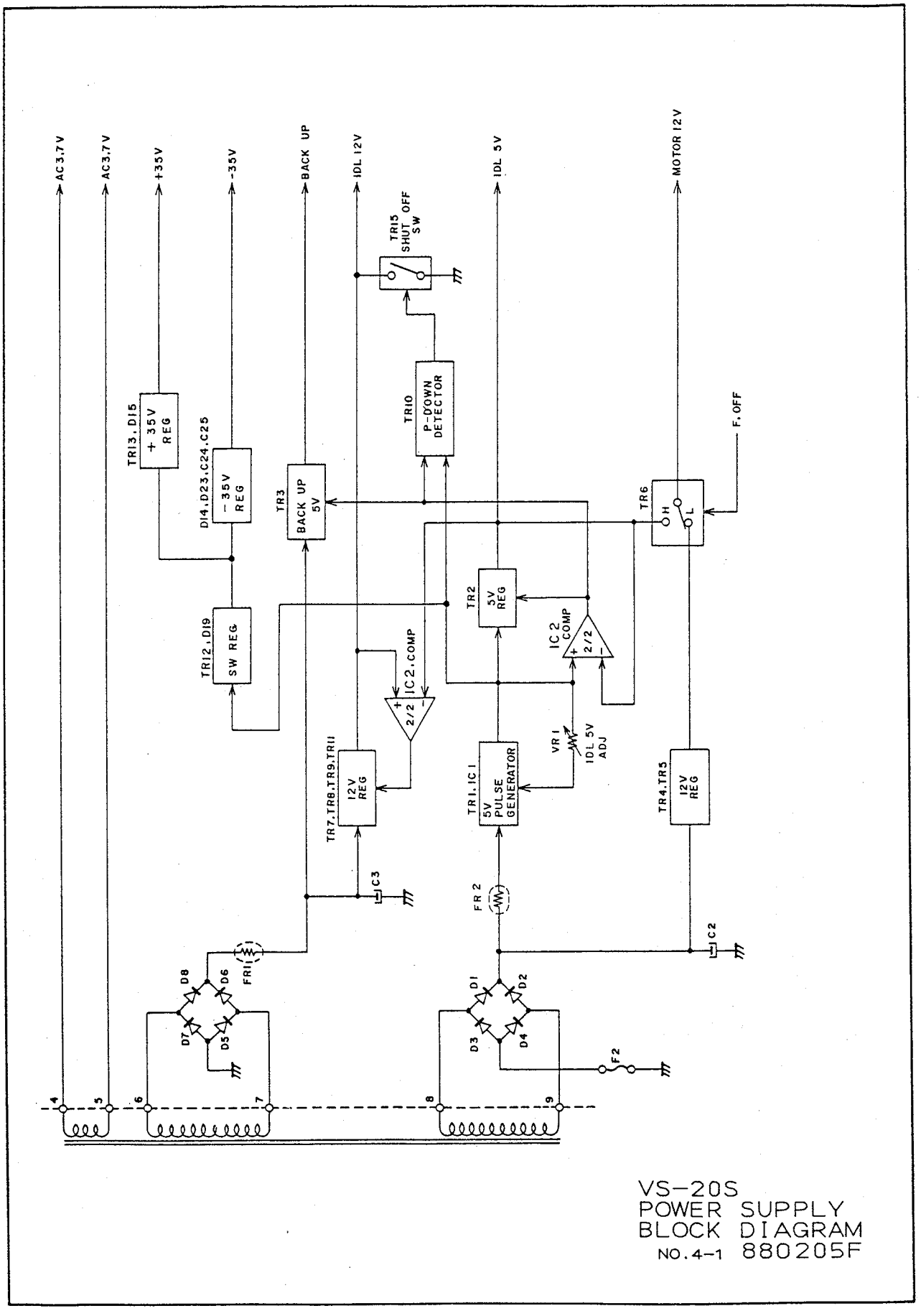
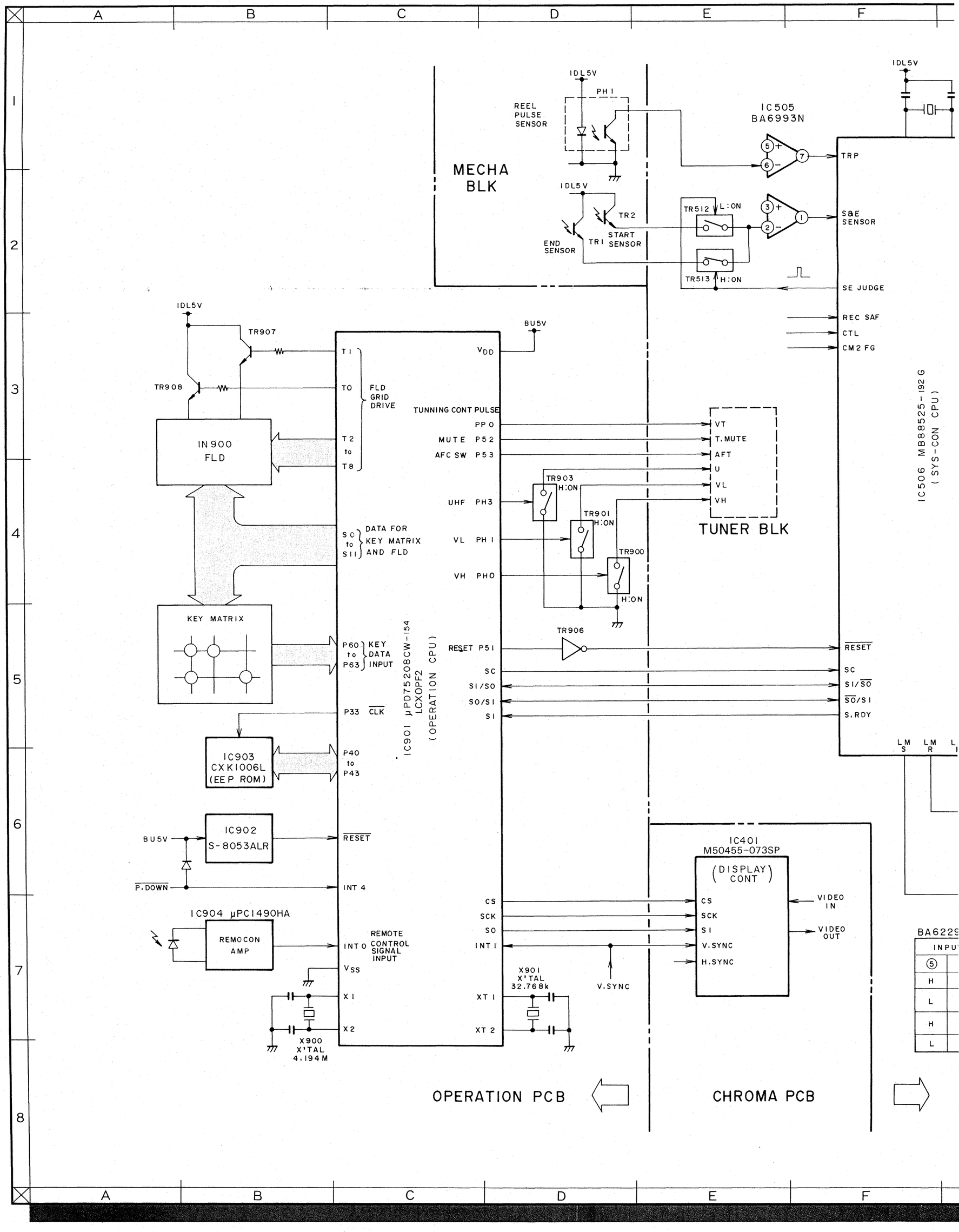


VS-20S
POWER SUPPLY
BLOCK DIAGRAM
NO.4-1 880205F


MECHA BLK
IDL5V
PH1
REEL PULSE SENSOR
IC505 BA6993N
TRP
IDL5V
TR2
TR1
END SENSOR
START SENSOR
TR512 L:ON
TR513 H:ON
S&E SENSOR
SE JUDGE
REC SAF
CTL
CM2 FG
IC506 MB88525-192G (SYS-CON CPU)
IDL5V
TR907
TR908
IN900 FLD
T1
T0
T2 to T8
FLD GRID DRIVE
BU5V
VDD
TUNNING CONT PULSE
PP0
MUTE P52
AFC SW P53
UHF PH3
VL PH1
VH PH0
TR903 H:ON
TR901 H:ON
TR900 H:ON
VT
T.MUTE
AFT
U
VL
VH
TUNER BLK
S0 to S11 DATA FOR KEY MATRIX AND FLD
KEY MATRIX
P60 to P63 KEY DATA INPUT
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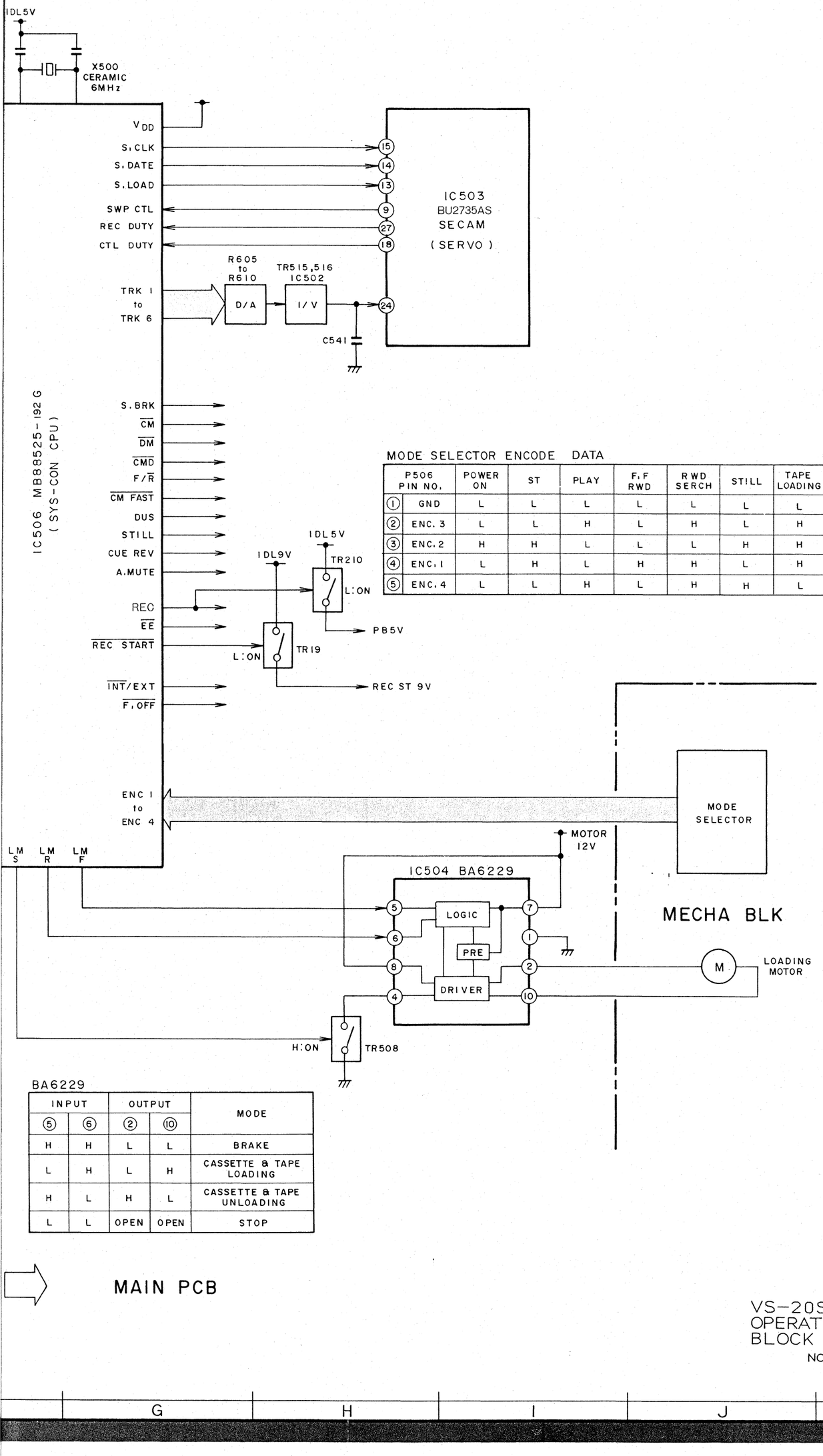
SC
SI/SO
SO/SI
SI
RESET
SC
SI/SO
SO/SI
S.RDY
LM S
LM R
BU5V
IC902 S-8053ALR
RESET
P.DOWN
INT4
IC904 μPC1490HA
REMOCON AMP
INT0
REMOTE CONTROL SIGNAL INPUT
VSS
X1
X2
X900 X'TAL 4.194M
X901 X'TAL 32.768k
XT1
XT2
IC401 M50455-073SP (DISPLAY CONT)
CS
SCK
SO
INT1
SI
V.SYNC
H.SYNC
VIDEO IN
VIDEO OUT
V.SYNC
BA6229
INPUT
5
H
L
H
L
OPERATION PCB
CHROMA PCB



MODE SELECTOR ENCODE DATA

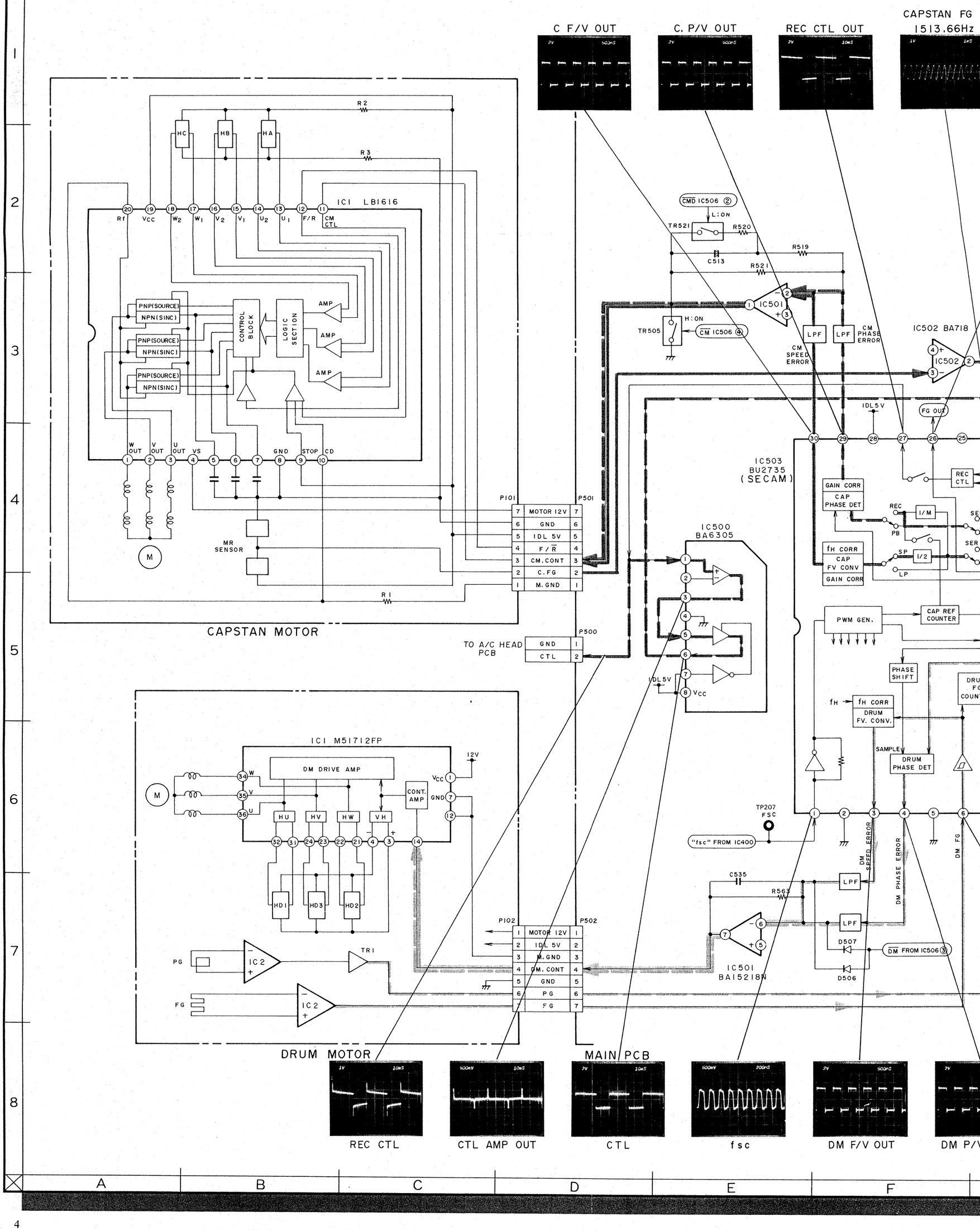
P506 PIN NO.		POWER ON	ST	PLAY	F.F RWD	RWD SERCH	STILL	TAPE LOADING	CASSETTE LOADING
①	GND	L	L	L	L	L	L	L	L
②	ENC.3	L	L	H	L	H	L	H	H
③	ENC.2	H	H	L	L	L	H	H	H
④	ENC.1	L	H	L	H	H	L	H	L
⑤	ENC.4	L	L	H	L	H	H	L	L

BA6229

INPUT		OUTPUT		MODE
⑤	⑥	②	⑩	
H	H	L	L	BRAKE
L	H	L	H	CASSETTE & TAPE LOADING
H	L	H	L	CASSETTE & TAPE UNLOADING
L	L	OPEN	OPEN	STOP

MAIN PCB

VS-20S
OPERATION & SYSCON
BLOCK DIAGRM
NO.4-2 870602F


C F/V OUT
C. P/V OUT
REC CTL OUT
CAPSTAN FG
1513.66Hz
R2
R3
HC
HB
HA
IC1 LB1616
Rf
Vcc
W2
W1
V2
V1
U2
U1
F/R
CM CTL
PNP(SOURCE)
NPN(SINC)
CONTROL BLOCK
LOGIC SECTION
AMP
W OUT
V OUT
U OUT
VS
GND
STOP
CD
M
MR SENSOR
R1
CAPSTAN MOTOR
P101
P501
MOTOR 12V
GND
IDL 5V
F/R
CM.CONT
C.FG
M.GND
P500
TO A/C HEAD PCB
GND
CTL
CMD IC506 ②
L:ON
TR521
R520
R519
C513
R521
IC501
H:ON
TR505
CM IC506 ④
LPF
CM SPEED ERROR
CM PHASE ERROR
IC502 BA718
IC502
IDL 5V
FG OUT
IC503 BU2735 (SECAM)
GAIN CORR
CAP PHASE DET
REC
I/M
PB
REC CTL
fH CORR
CAP FV CONV
GAIN CORR
SP
1/2
LP
IC500 BA6305
PWM GEN.
CAP REF COUNTER
PHASE SHIFT
fH
fH CORR
DRUM FV. CONV.
SAMPLE
DRUM PHASE DET
IC1 M51712FP
12V
DM DRIVE AMP
CONT. AMP
Vcc
GND
HU
HV
HW
VH
HD1
HD3
HD2
TP207
FSC
"fsc" FROM IC400
DM SPEED ERROR
DM PHASE ERROR
DM FG
C535
R563
LPF
D507
D506
DM FROM IC506 ③
IC501 BA15218N
P102
P502
MOTOR 12V
IDL 5V
M.GND
DM. CONT
GND
PG
FG
TR1
IC2
DRUM MOTOR
MAIN PCB
REC CTL
CTL AMP OUT
CTL
fsc
DM F/V OUT
DM P/V

VS-20S
SERVO
BLOCK DIAGRAM
NO.4-3 870603F

REC/EE VIDEO OUT

PB VIDEO OUT

REC/EE VIDEO OUT

PB VIDEO OUT

PB CHROMA

REC Y

OPERATION PCB

PICTURE

VIDEO IN

AUDIO & PRE AMP PCB

MAIN PCB

PB FM OUT

PB Y

REC/EE AGC OUT

REC FM OUT

REC SYNC GATE IN

PB LPF IN

REC LPF IN

IC800 μPC2313CA (PRE AMP)

SWP

AGC DET.

CROMA TRAP

AGC AMP

PEAKING AMP

CHROMA AMP

CK Q P

EQ AMP

MUTE

CURRENT AMP

PB ON

REC ON

PRE AMP CH-1

PRE AMP CH-2

CH-2

CH-1

P800

VIDEO HEAD

H.OFF

WF10

P.B LC

GND

IDL 5V

REC 9V

IDL 9V

P.B Y

REC FM

A. GND

A. IN

A. OUT

TO 21PIN PCB (P302 ⑤)

TO 21PIN PCB (P302 ①)

TO FE HEAD

GND 1

F.E HEAD 2

TO A/C HEAD

SE HEAD 1

GND 2

P.B 3

REC 4

BIAS ADJ

VR701

TR700 FL700 OSC BIAS

IC700 LA7292 (AUDIO SIGNAL PROCESSING IC)

REC

P.B EE

RIPPLE FILTER

REC/EE CONT

PB/EE CONT

MUTING CONT

FP SW CONT

LP SW CONT

REC AMP

EQ AMP

P.B MUTE

ALC

ALC DET

LINE AMP

REC MUTE

CT14

VR700 P.B LEVEL

WF11

EE

REC

SWP

A.MUTE

FROM IC506

PB LC

PB C

C SYNC

V SYNC

SELECT V

TP200

C.SYNC

VR201

IDL 9V

LPF FL200

FL400 BPF 4.5MHz

REC SYNC GATE

C416

MUTE

LOGIC

NC

HPF

LIM

LPF

DOC

DETAIL EMPH

AMP

9 SEP

DET

AGC

CLP

MIX

PICT.

EE

PB

Vcc

REC Y SIGNAL LINE.

PB Y SIGNAL LINE

REC CHROMA LINE

PB CHROMA LINE

REC AUDIO SIGNAL LINE

PB AUDIO SIGNAL LINE

CHROMA PCB

REC

REC

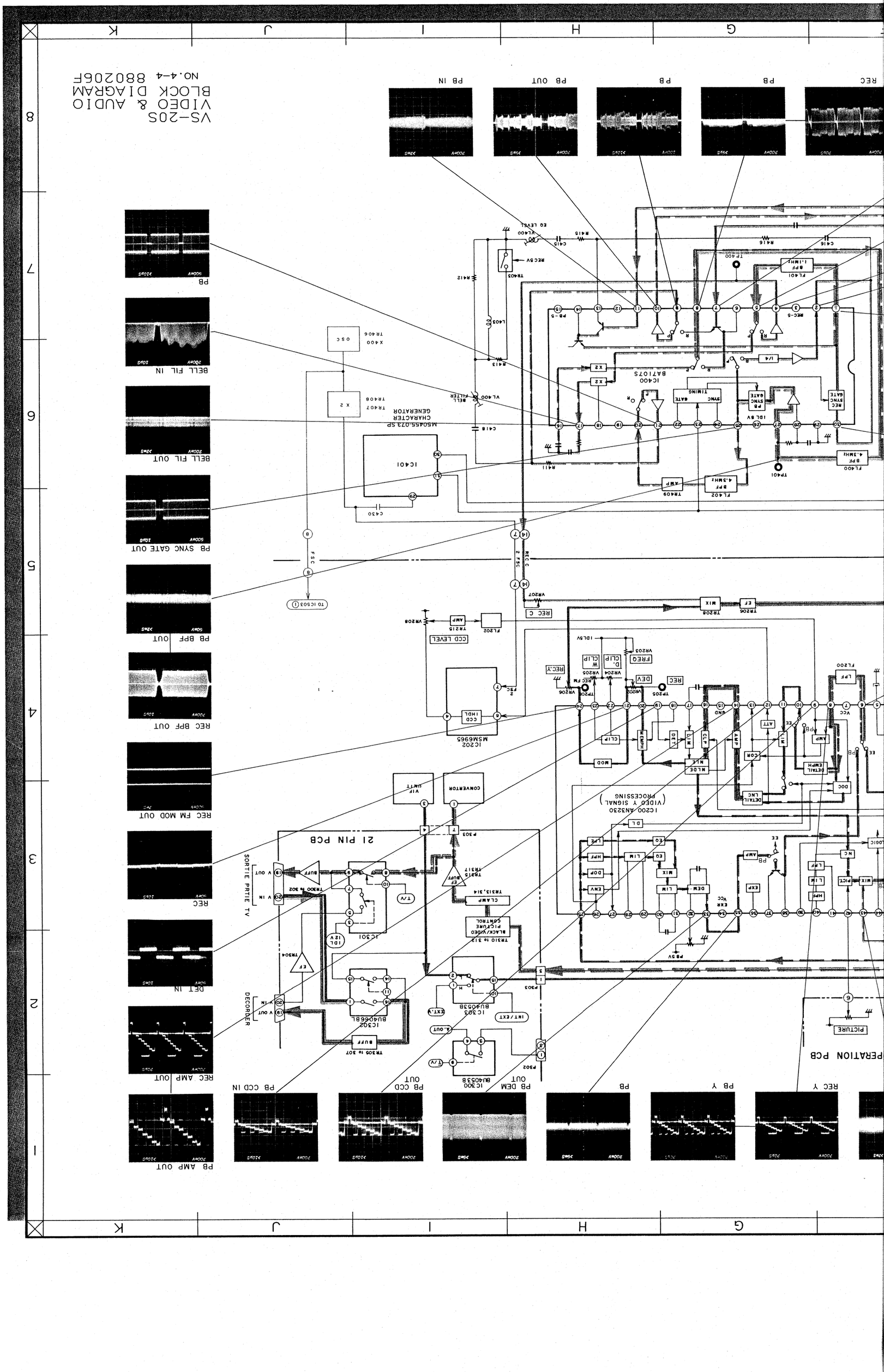
REC

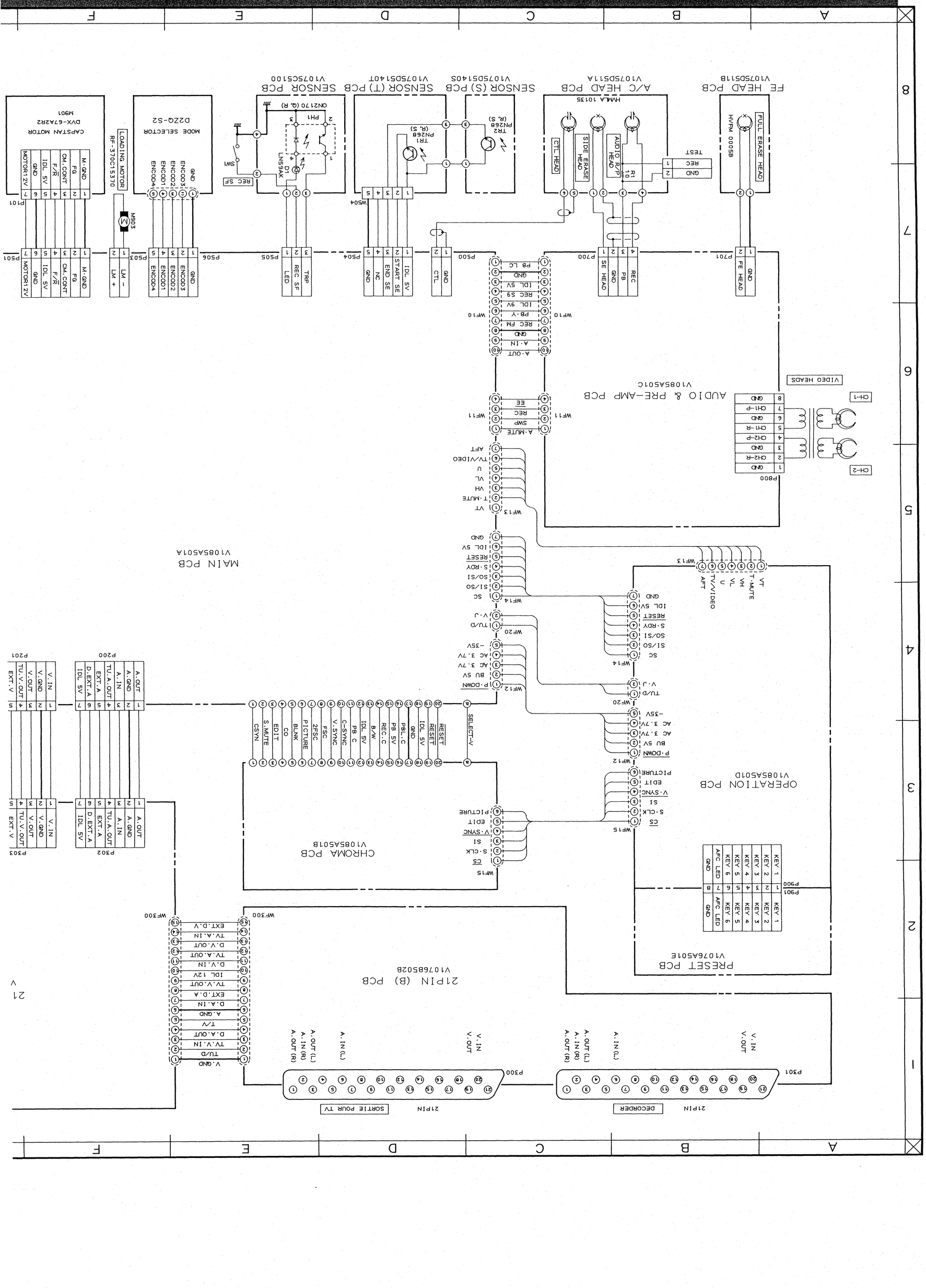
PB LPF OUT

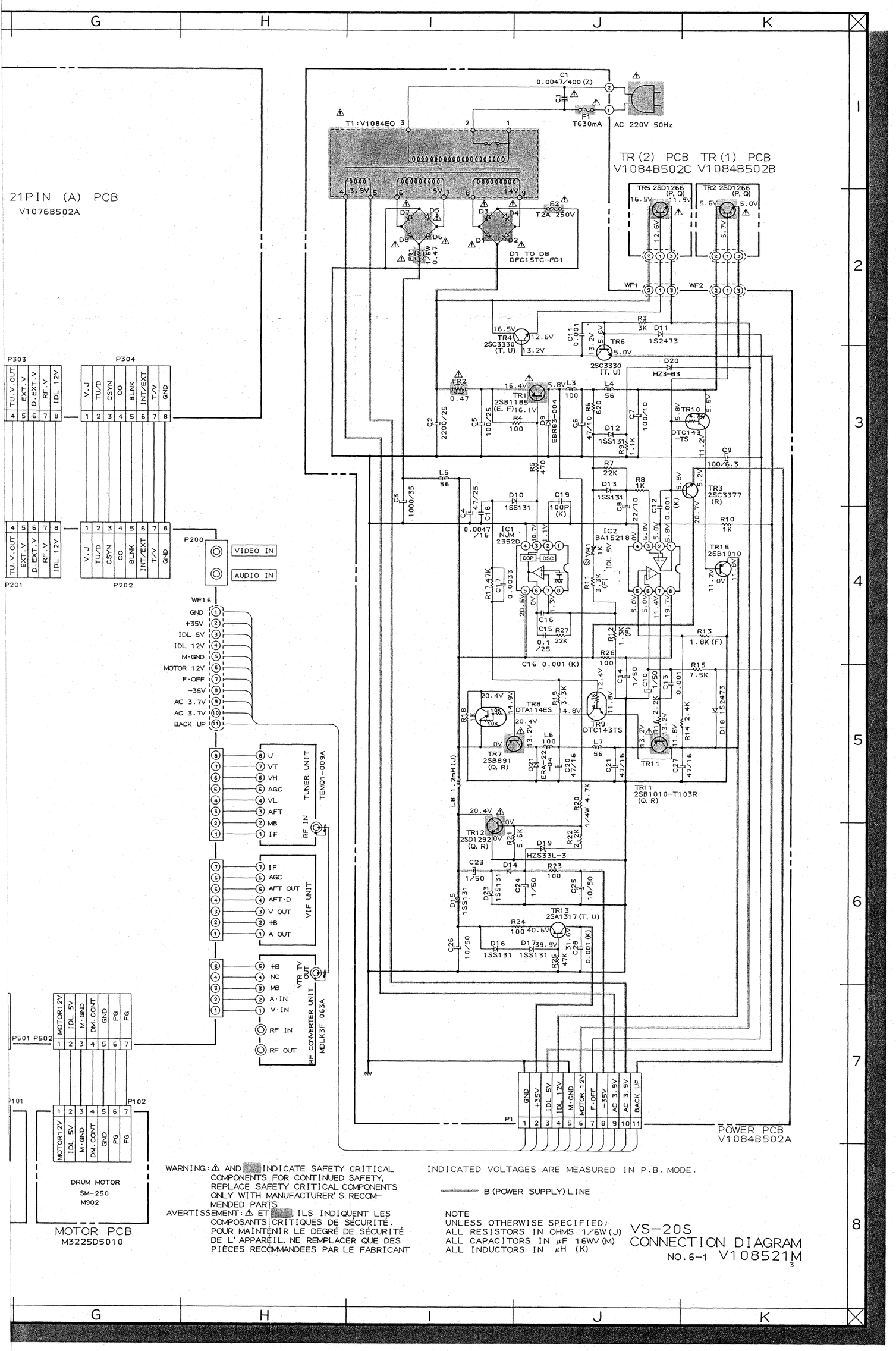
REC IN

REC

VS-20S
VIDEO & AUDIO
BLOCK DIAGRAM
NO.4-4 8802O6F




FE HEAD PCB
V10750511B
A/C HEAD PCB
V10750511A
SENSOR (S) PCB
V10750514OS
SENSOR (T) PCB
V10750514OT
SENSOR PCB
V10750510O
HMA-A 10135
HY/FM 00058
FULL ERASE HEAD
SIDE ERASE HEAD
AUDIO R/P HEAD
CTL HEAD
TEST
REC
GND
TR2 PN268 (R, S)
TR1 PN268 (R, S)
ON2170 (Q, R)
LN59AK
D1
PH1
SW1
REC SF
MODE SELECTOR
D22A-S2
ENCOD4
ENCOD1
ENCOD2
ENCOD3
GND
LOADING MOTOR
RF-370C15370
M903
CAPSTAN MOTOR
DVX-67A2R2
M901
MOTOR1 2V
GND
IDL 5V
F/R
CM. CONT
FG
M. GND
P101
P501
P503
P506
P505
P504
P700
P701
W504
LED
REC SF
TRP
GND
NC
END SE
START SE
IDL 5V
CTL
GND
SE HEAD
GND
PB
REC
FE HEAD
GND
P500
W710
PB LC
GND
IDL 5V
REC S9
IDL 9V
PB·Y
REC PM
GND
GND
A·IN
A·OUT
W711
A·MUTE
SWP
REC
EE
AUDIO & PRE-AMP PCB
V10B5A501C
VIDEO HEADS
CH-1
CH-2
P800
GND
CH1-P
CH1-R
CH2-P
CH2-R
W713
VT
T·MUTE
VH
VL
U
TV/VIDEO
AFT
W714
SC
SI/SO
SO/SI
S·RDY
RESET
IDL 5V
GND
W720
TU/D
V·J
W712
P·DOWN
BU 5V
AC 3.7V
AC 3.7V
-35V
SELECT-V
RESET
RESET
IDL 5V
GND
IDL 5V
B/W
REC.C
PB 5V
PBL·C
IDL 5V
PB C
C-SYNC
V.SYNC
FSC
2FSC
PICTURE
BLNK
CO
EDIT
S.MUTE
CSYN
W715
CS
S·CLK
SI
V·SYNC
EDIT
PICTURE
OPERATION PCB
V10B5A501D
CHROMA PCB
V10B5A501B
PRESET PCB
V1076A501E
P901
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
KEY 6
AFC LED
GND
W300
V.GND
TU/D
TV.V.IN
D.A.OUT
TV/
A.GND
D.A.IN
EXT.D.A
TV.V.OUT
IDL 12V
D.V.IN
TV.A.OUT
D.V.OUT
TV.A.IN
EXT.D.V
21PIN (B) PCB
V10768502B
P300
P301
A.OUT (L)
A.IN (R)
A.OUT (R)
A.IN (L)
V.IN
V.OUT
21PIN
DECORDER
SORTIE POUR TV
P200
P201
P302
P303
V.IN
V.GND
V.OUT
TU.V.OUT
EXT.V
A.OUT
A.GND
A.IN
TU.A.OUT
EXT.A
D.EXT.A
IDL 5V
MAIN PCB
V10B5A501A



WARNING: ⚠ AND ▒ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ ET ▒ ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

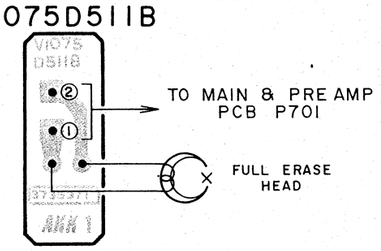
INDICATED VOLTAGES ARE MEASURED IN P.B. MODE.

B (POWER SUPPLY) LINE

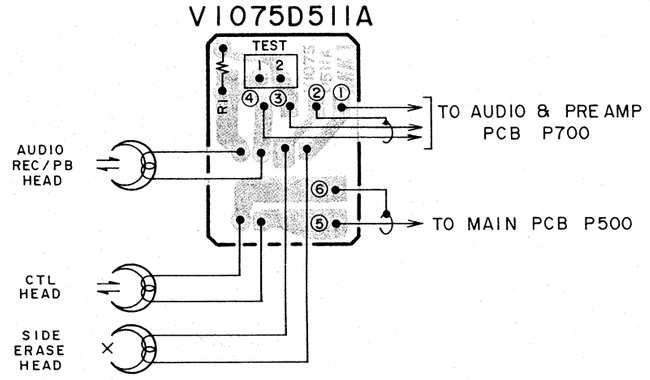
NOTE
UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 16WV (M)
ALL INDUCTORS IN μH (K)

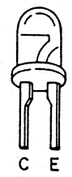
VS-20S
CONNECTION DIAGRAM
NO.6-1 V108521M
3

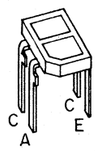
FULL ERASE HEAD PCB V1075D511B

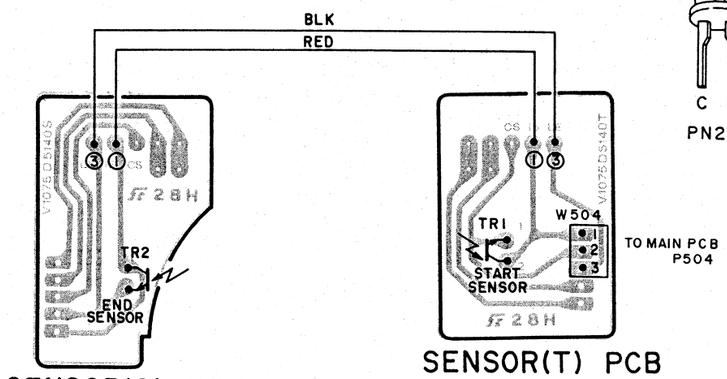


A/C HEAD PCB V1075D511A



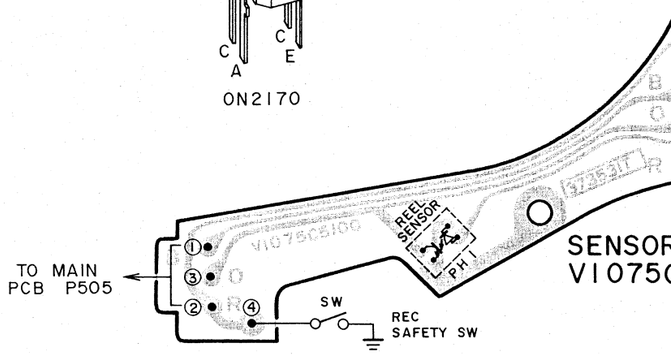






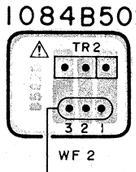
SENSOR(S) PCB V1075D5140S

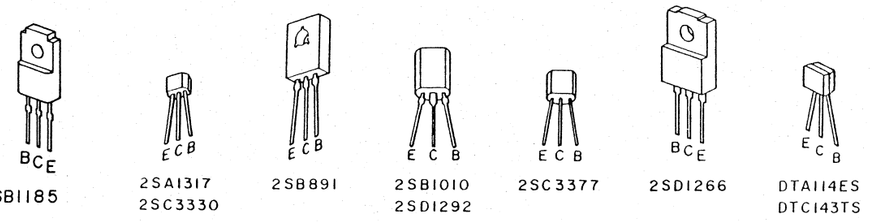
SENSOR(T) PCB V1075D5140T



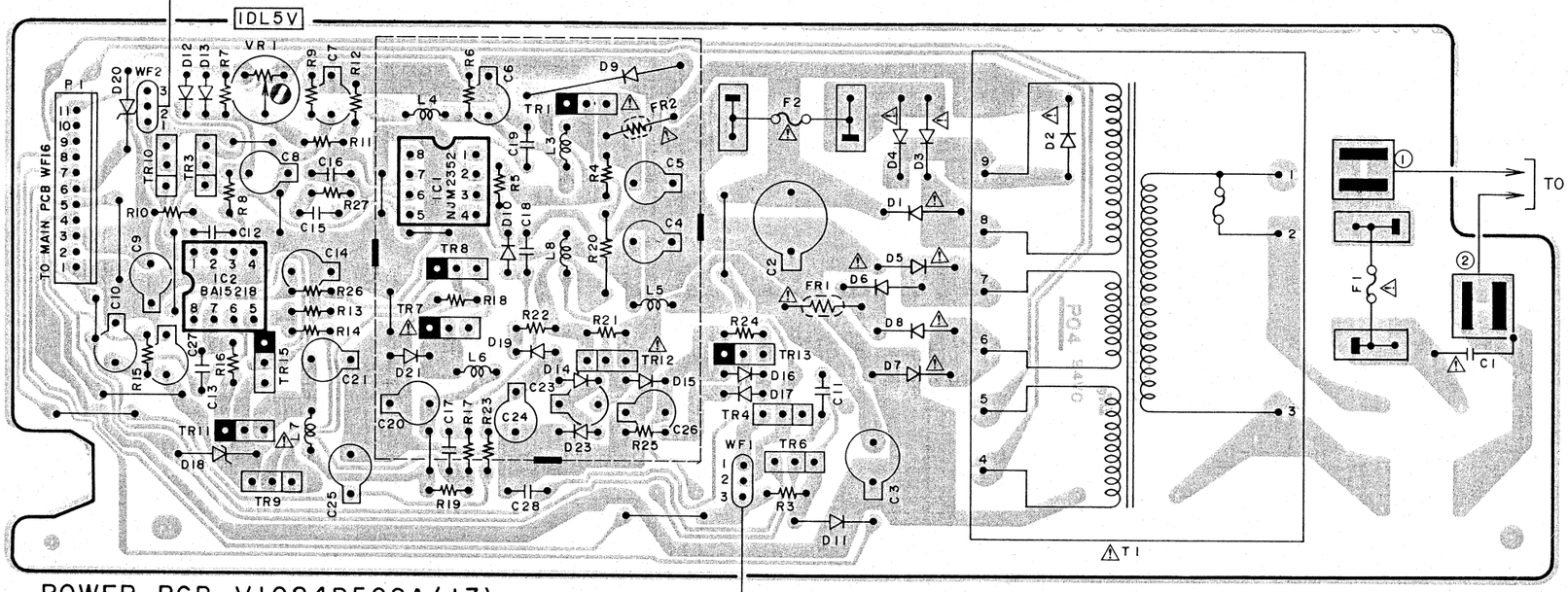
SENSOR V1075

TR(1) PCB V1084B502B(J3)





TR1.....2S
TR2,5.....2S
TR3.....2S
TR4,6.....2S
TR7,11.....2
TR8.....DTA
TR9,10...DTC
TR12.....2S
TR13.....2S
TR15.....2S

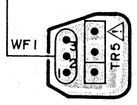


POWER PCB V1084B502A(J3)

B = PNP TRANSISTOR

B = NPN TRANSISTOR

TR(2) PCB V1084B502C(J3)

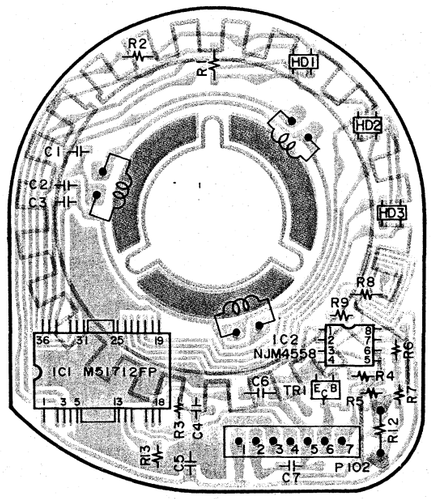


WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

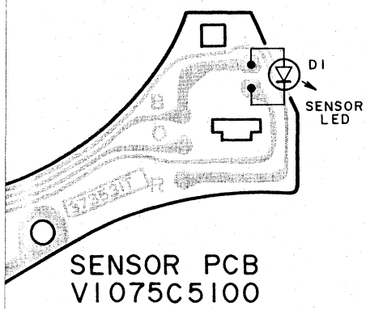
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

RE AMP
0

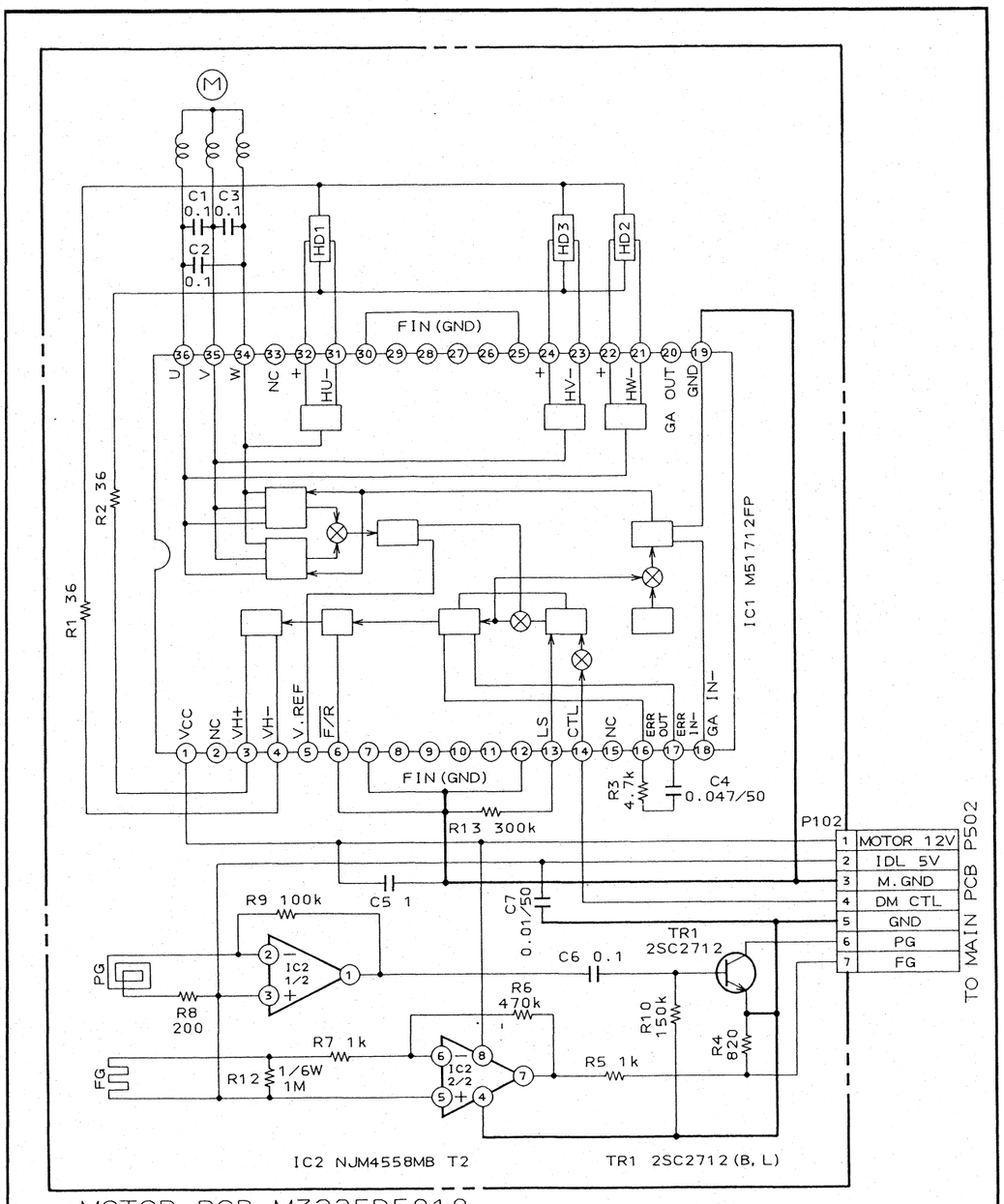
P500



MOTOR PCB M3225D5010(SM-250)



SENSOR PCB
V1075C5100



MOTOR PCB M3225D5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 16WV (J)

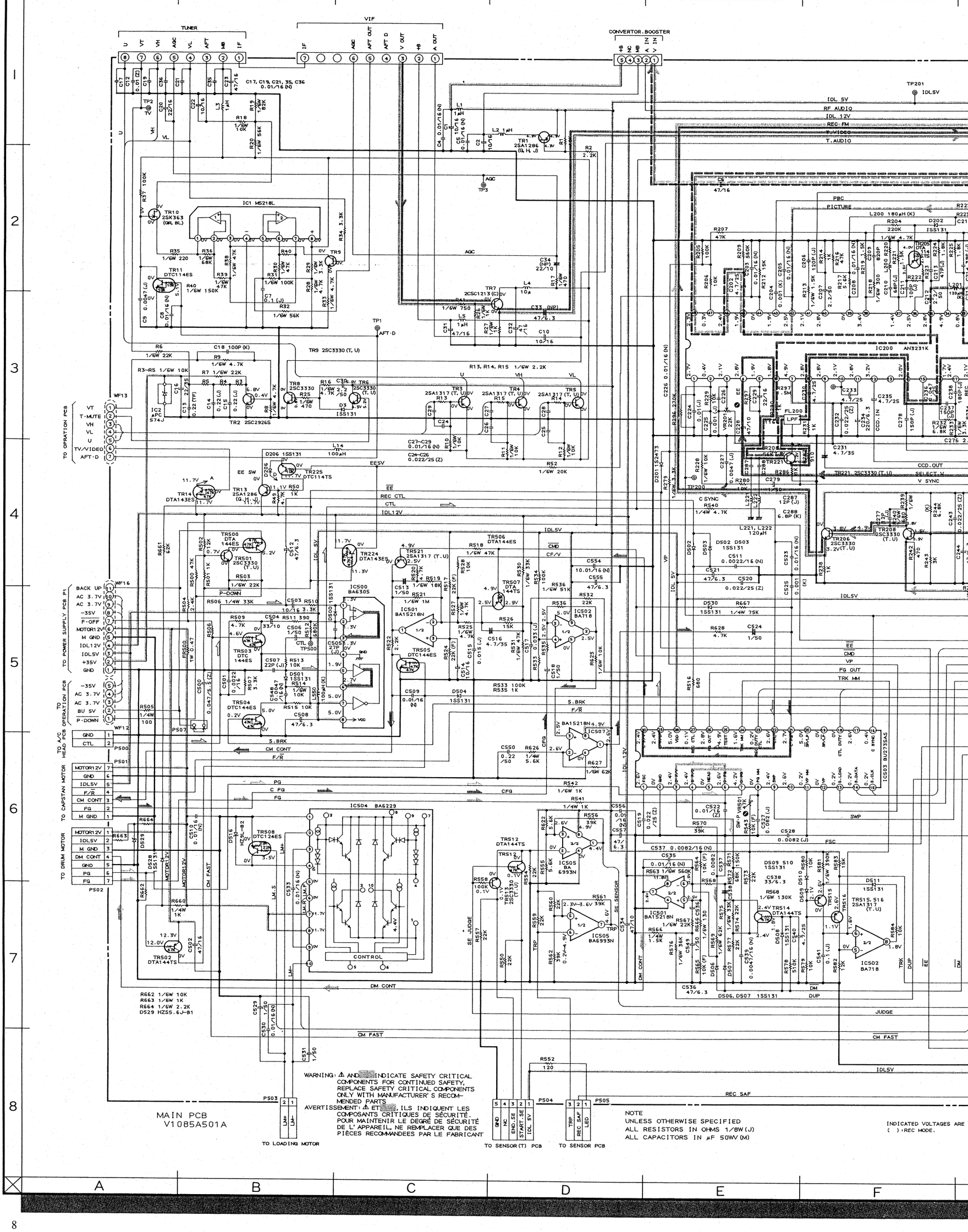
VS−20S
MOTOR PCB
SCHEMATIC DIAGRAM
NO.6-2 V109508F

TR1.....2SB1185
TR2,5.....2SD1266
TR3.....2SC3377
TR4,6.....2SC3330
TR7,11.....2SB891
TR8.....DTA114ES
TR9,10...DTC143TS
TR12.....2SD1292
TR13.....2SA1317
TR15.....2SB1010

TO AC PLUG

SAFETY,
TURER'S

ICANT


TUNER
VIF
CONVERTOR.BOOSTER
IC1 M5218L
TR10 2SK363 (GR, BL)
TR11 DTC114ES
TR9 2SC3330 (T, U)
TR7 2SC1213 (C) 0V
TR1 2SA1286 (G, H, J)
TR2 2SC2926S
TR3 2SA1317 (T, U)
TR4 2SA1317 (T, U)
TR5 2SA1317 (T, U)
TR8 2SC3330
IC2 μPC 574J
D3 ISS131
D206 1SS131
TR225 DTC114TS
TR13 2SA1286 (G, H, J)
TR14 DTA143ES
TR500 DTA 144ES
TR501 2SC3330 (T, U)
TR224 DTA143ES
TR521 2SA1317 (T, U)
TR506 DTA144ES
TR507 DTA 144TS
TR503 DTC 144ES
TR505 DTC144ES
TR504 DTC144ES
IC500 BA6305
IC501 BA15218N
IC502 BA718
IC503 BU2735AS
IC504 BA6229
IC505 BA6993N
IC507 BA15218N
TR512 DTA144TS
TR508 DTC124ES
TR502 DTA144TS
IC200 AN3231K
TR221 2SC3330 (T, U)
TR206 2SC3330
TR515, 516 2SA1317 (T, U)
TR514 DTA144TS
IC502 BA718
IC503 BU2735AS
TP1 AFT·D
TP2
TP3 AGC
TP201 IDL5V
WF13
WF16
WF12
P500
P501
P502
P503
P504
P505
P507
TO OPRATION PCB
VT
T·MUTE
VH
VL
U
TV/VIDEO
AFT·D
TO POWER SUPPLY PCB P1
BACK UP
AC 3.7V
AC 3.7V
−35V
F·OFF
MOTOR12V
M GND
IDL12V
IDL5V
+35V
GND
TO OPERATION PCB
−35V
AC 3.7V
AC 3.7V
BU 5V
P·DOWN
TO A/C HEAD PCB
GND
CTL
TO CAPSTAN MOTOR
MOTOR12V
GND
IDL5V
F/R
CM CONT
FG
M GND
TO DRUM MOTOR
MOTOR12V
IDL5V
M GND
DM CONT
GND
PG
FG
IDL 5V
RF AUDIO
IDL 12V
REC FM
T.VIDEO
T.AUDIO
PBC
PICTURE
L200 180μH (K)
IC200 AN3231K
FL200
LPF
CCD.IN
CCD.OUT
SELECT V
V SYNC
C SYNC
SWP
FSC
JUDGE
DUP
DM
CM FAST
REC SAF
TRK MM
S.BRK
F/R
CM CONT
PG
C FG
FG
CFG
EE SW
REC CTL
CTL
IDL12V
EE5V
EE
CMD
VP
FG OUT
SE JUDGE
SE SENSOR
TRP
DM CONT
CONTROL
P-DOWN
R661 62K
R662 1/6W 10K
R663 1/6W 1K
R664 1/6W 2.2K
D529 HZS5.6J-B1
WARNING: ⚠ AND ⚠ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSEMENT: ⚠ ET ⚠ ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT
MAIN PCB
V1085A501A
TO LOADING MOTOR
TO SENSOR(T) PCB
TO SENSOR PCB
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)
ALL CAPACITORS IN μF 50WV(M)
INDICATED VOLTAGES ARE ( ) : REC MODE.

VS-20S
MAIN PCB
SCHEMATIC DIAGRAM
NO.6-3 V10852ZM
5

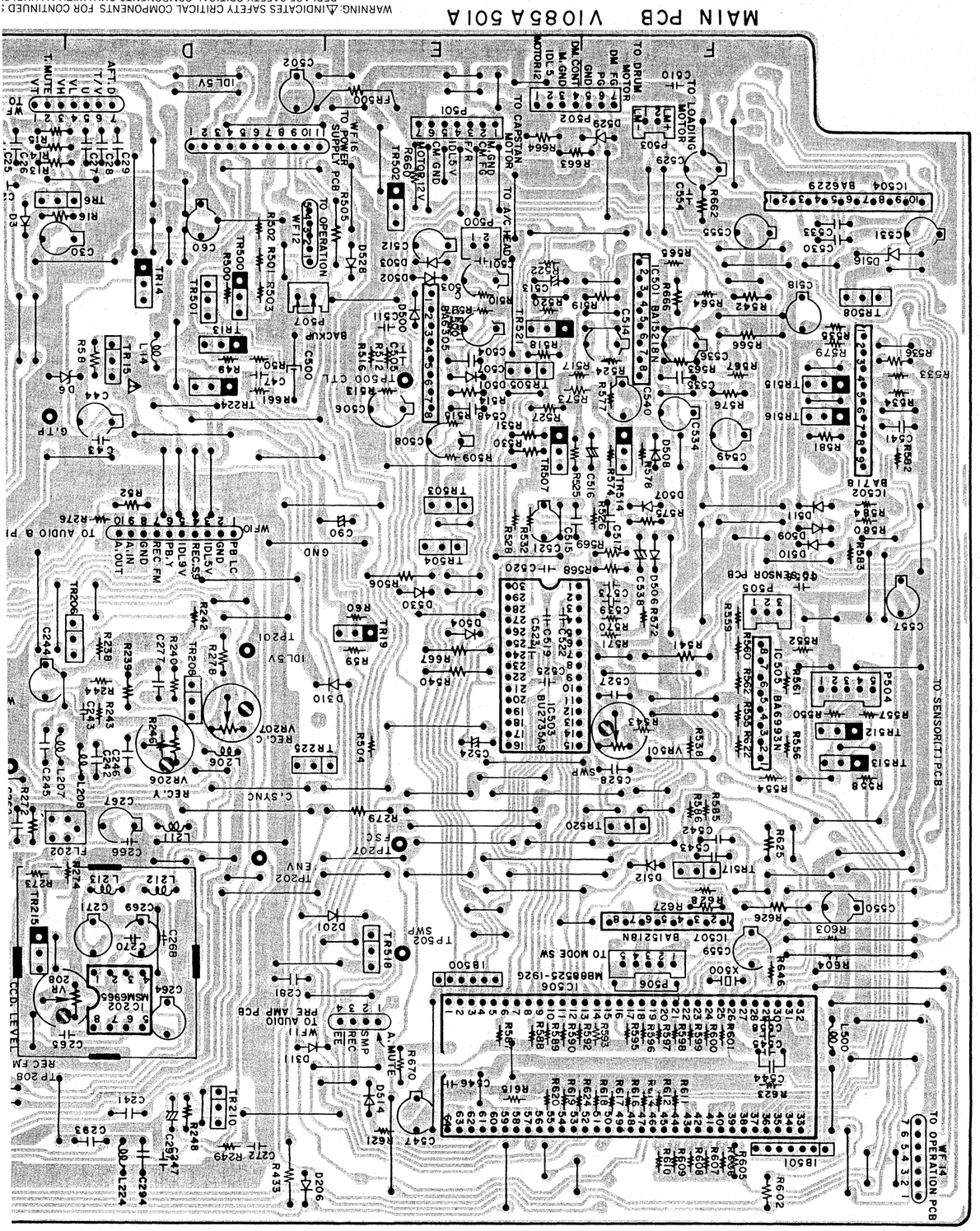
B (POWER SUPPLY) LINE
REC CHROMA SIGNAL
PB CHROMA SIGNAL
REC Y SIGNAL
PB Y SIGNAL
DM PHASE
DM SPEED
CM PHASE
CM SPEED

TO AUDIO & PRE AMP PCB
TO OPERATION PCB
TO CHROMA PCB
TO MODE SW
TO 21PIN PCB (A) P504
TO 21PIN PCB (A) P303
TO 21PIN PCB (A) P502
TO AUDIO & PRE AMP PCB WM10

IC506 M88825-192G LCXSYP3
IS500 10KX5
ICS01 10KX6
SP/LP
SE JUDGE
INT/EXT
RESET
EE
SWP
REC
DM
CTL
CMD
S.BRK
S.LOAD
F/R
F.OFF
FSC
REC C
REC Y
SELECT.Y
V.SYNC
C.SYNC
V SYNC
2 FSC
B/W
GND
EDIT
PICTURE
PBC
PB SV
T.AUDIO
PB LC
PB ENV
S.MUTE
C SYNC
IDL.5V
W.CLP
D-CLP
D-EV
REC FM
REC ST
CCD LEVEL
CCD IN
CCD OUT
COOLER
EXT VIDEO IN
EXT AUDIO IN

WARNING: △INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED S
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFAC
RECOMMENDED PARTS
AVERTISSEMENT: △IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRI

MAIN PCB V10854 501A



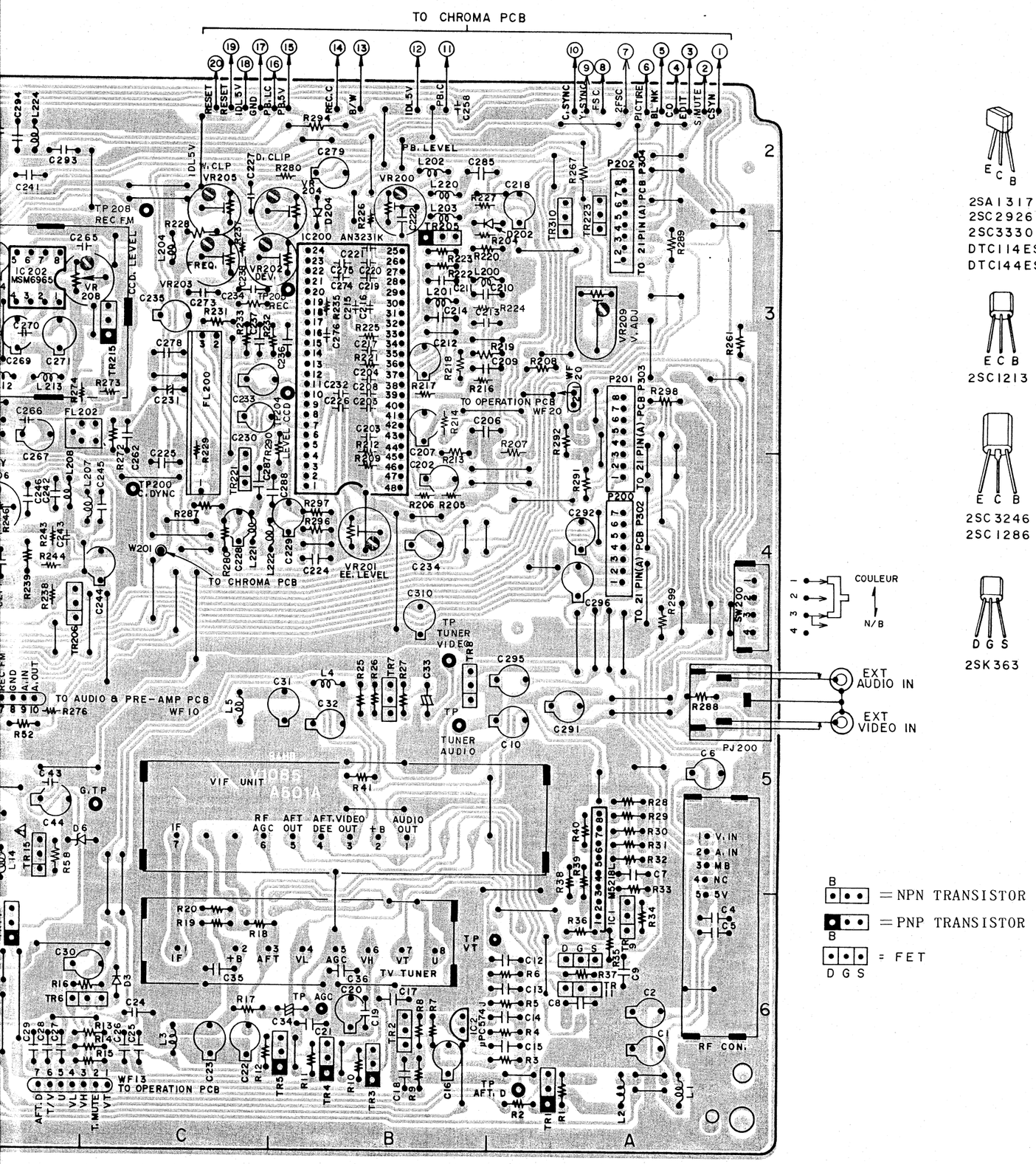
CONNECTORS,WIRES

P200	A4
P201	A3,4
P202	A2,3
P500	B6
P501	B6
P502	F,E6
P503	F6
P504	F4
P505	F4
P506	F3
P507	D,E6
WF10	D5
WF11	E3
WF12	D6
WF13	D,C6
WF14	F2
WF16	D6
WF20	A3

PRINCIPAL PARTS LOCATION

ICS	TRANSISTORS
IC1	A5,6
IC2	B6
IC200	B3
IC202	D3
IC500	B5,6
IC501	F5,6
IC502	F5
IC503	E4
IC504	F6
IC505	F4
IC506	E4
IC507	F3

TR1	A6
TR2	B6
TR3	B6
TR4	B6
TR5	B6
TR6	C6
TR7	B5
TR8	B5
TR9	A6
TR10	A6
TR11	A6
TR13	D5
TR14	D5
TR15	D5
TR19	E4
TR205	B3
TR206	D4
TR208	D4
TR210	D2
TR211	C4
TR215	C3
TR222	A2
TR223	A2
TR224	D5
TR225	D4
TR500	D6
TR501	D6
TR502	E6
TR503	E5
TR504	E5
TR505	E5
TR506	F6
TR507	E5
TR508	F6
TR509	F6
TR510	F6
TR511	F4
TR512	F4
TR513	F4
TR514	F4
TR515	F5
TR516	F5
TR517	F3
TR518	B3
TR520	B3
TR521	B5



E C B
2SA1317
2SC2926
2SC3330
DTC114ES
DTC144ES

E C B
2SC1213

E C B
2SC3246
2SC1286

D G S
2SK363

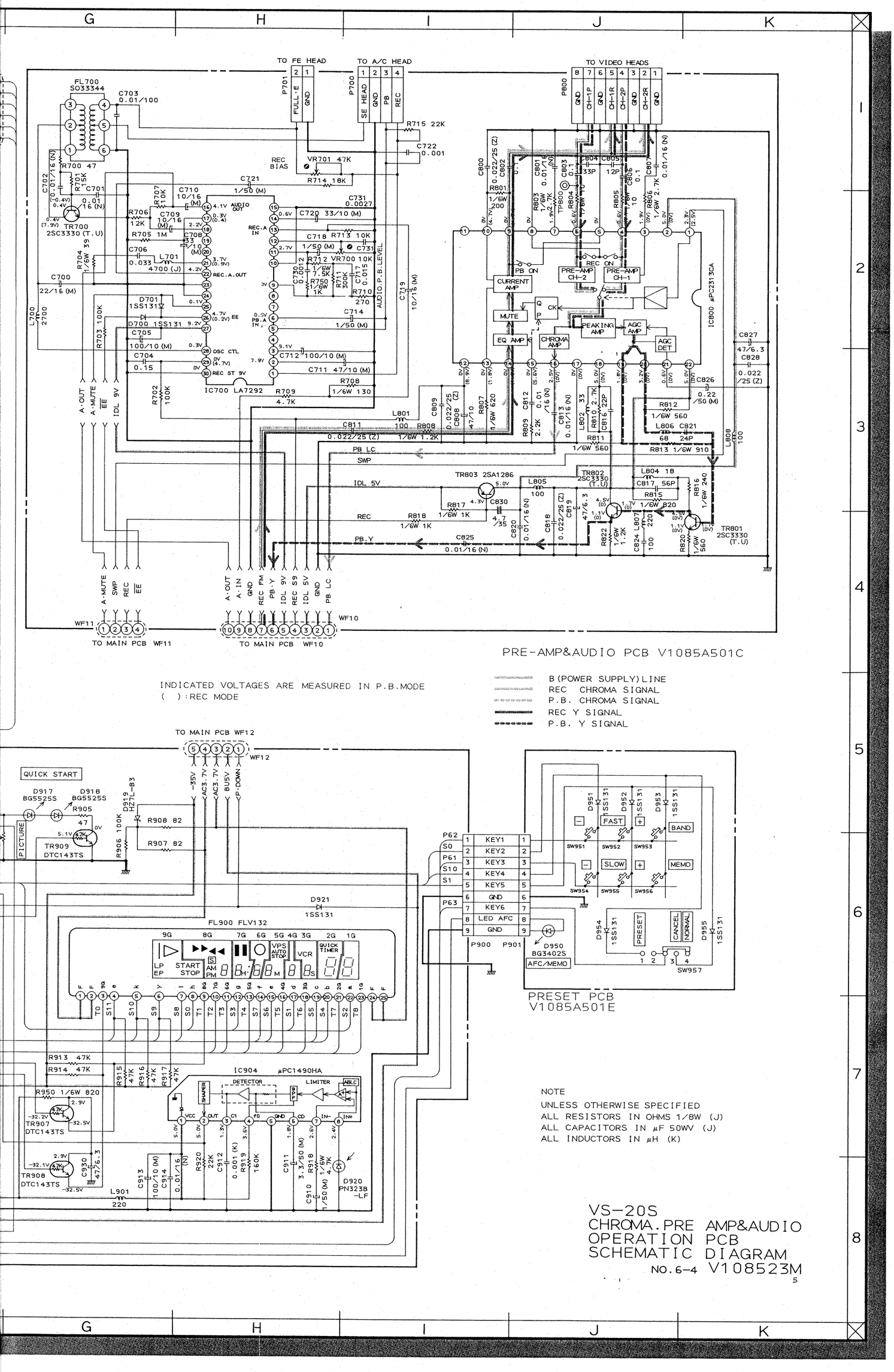
B
= NPN TRANSISTOR
= PNP TRANSISTOR
B
= FET
D G S

MPONENTS FOR CONTINUED SAFETY,
NENTS ONLY WITH MANUFACTURER'S

NTS CRITIQUES DE SÉCURITÉ.
CURITÉ DE L'APPAREIL.
ECOMMANDEES PAR LE FABRICANT

OPERATION PCB V1085A501D

CHROMA PCB V1085A501B



PRE-AMP&AUDIO PCB V1085A501C

INDICATED VOLTAGES ARE MEASURED IN P.B.MODE
( ) : REC MODE

B (POWER SUPPLY) LINE
REC CHROMA SIGNAL
P.B. CHROMA SIGNAL
REC Y SIGNAL
P.B. Y SIGNAL

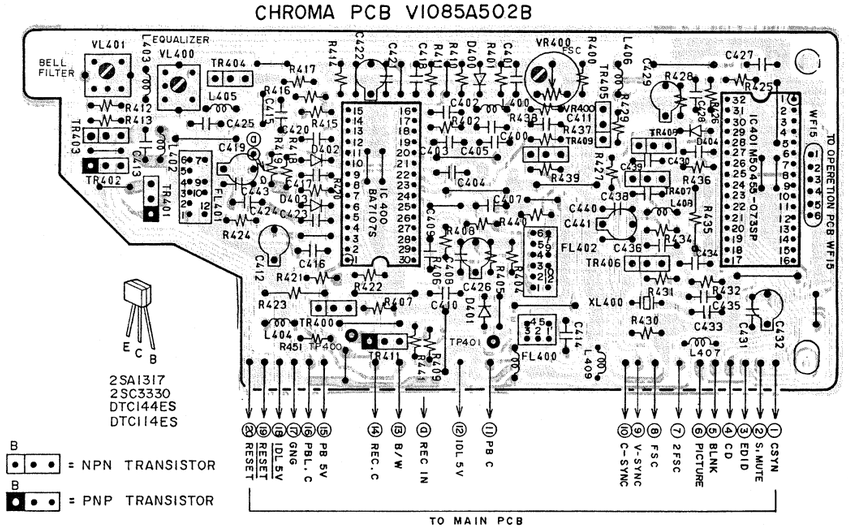
PRESET PCB
V1085A501E

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (J)
ALL INDUCTORS IN μH (K)

VS-20S
CHROMA.PRE AMP&AUDIO OPERATION PCB SCHEMATIC DIAGRAM

NO.6-4 V108523M

CHROMA PCB V1085A502B



2SA1317
2SC3330
DTC144ES
DTC114ES

B = NPN TRANSISTOR

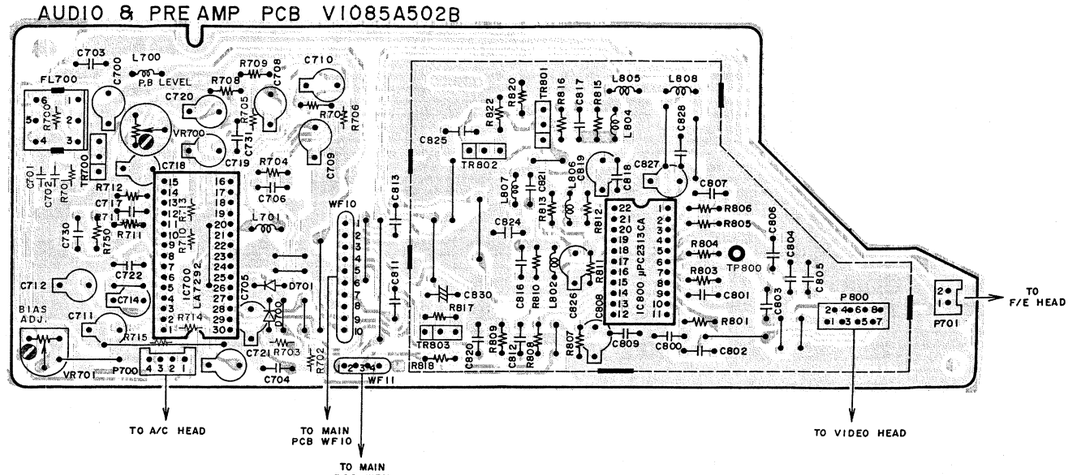
B = PNP TRANSISTOR

TR700,801,802 ····· 2SC3330
TR803 ····· 2SA1286

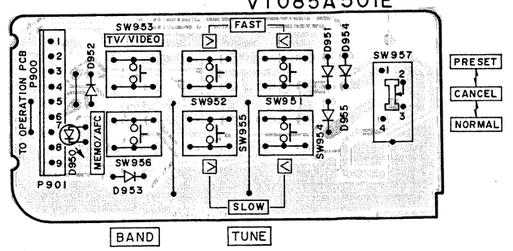
B = PNP TRANSISTOR

B = NPN TRANSISTOR

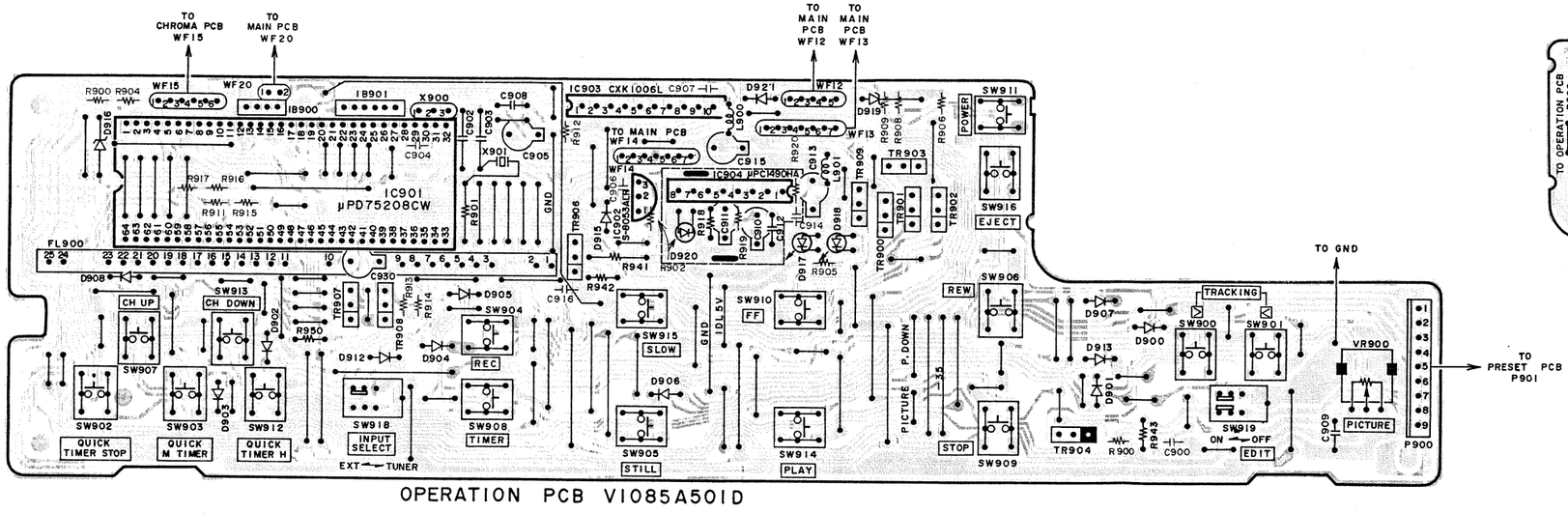
AUDIO & PREAMP PCB V1085A502B



PRESET PCB V1085A501E



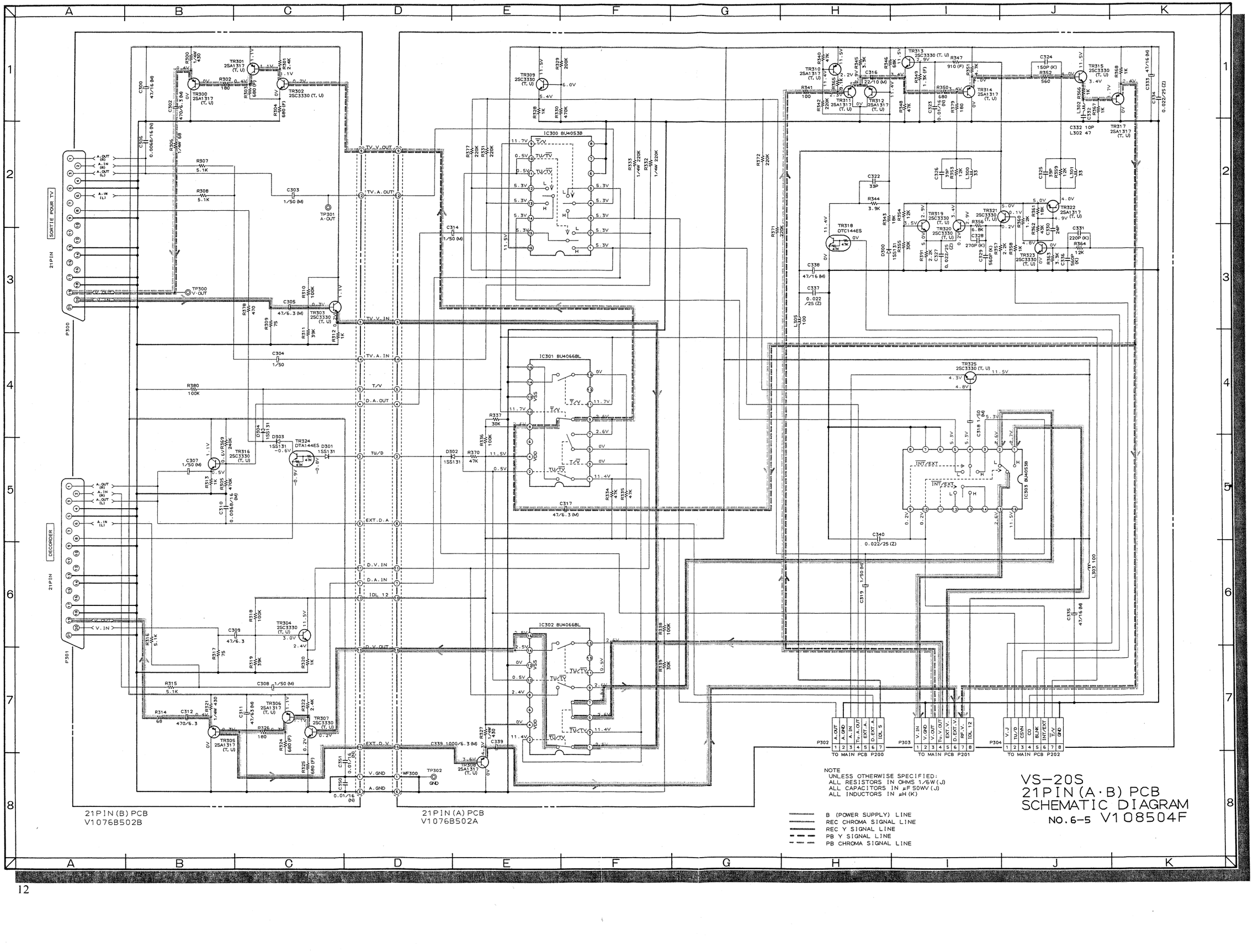
OPERATION PCB V1085A501D



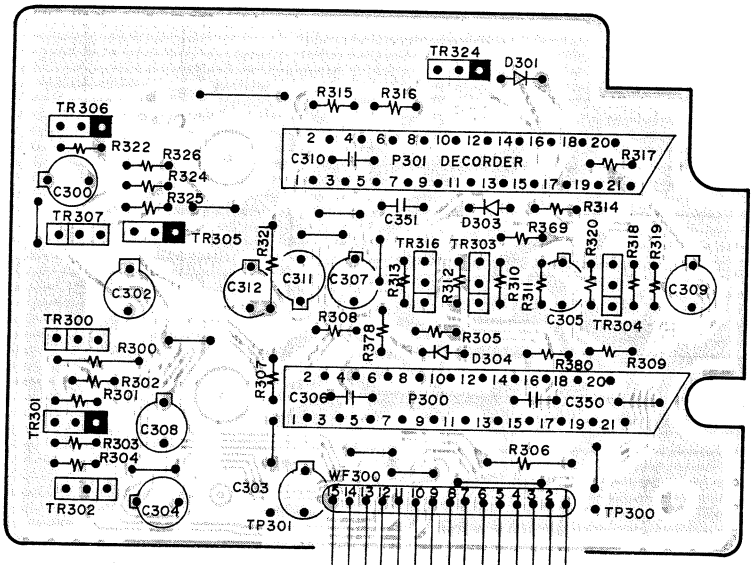
TR900,901,902,903
906 ····· DTC144ES
TR904 ····· DTA143TA
TR907,908,909 ····· DTC143TS

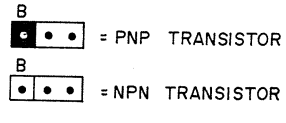
B = PNP TRANSISTOR

B = NPN TRANSISTOR

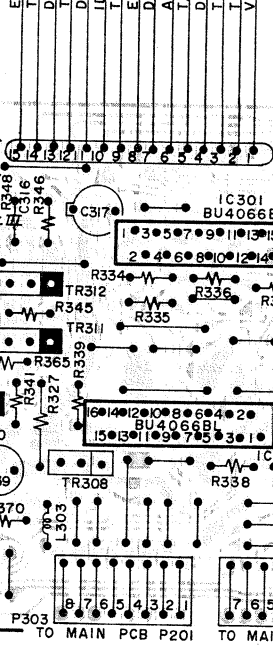

21PIN (B) PCB
V1076B502B
21PIN (A) PCB
V1076B502A
VS-20S
21PIN (A·B) PCB
SCHEMATIC DIAGRAM
NO.6-5 V108504F
NOTE
UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (J)
ALL INDUCTORS IN μH (K)
B (POWER SUPPLY) LINE
REC CHROMA SIGNAL LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE
PB CHROMA SIGNAL LINE
TO MAIN PCB P200
TO MAIN PCB P201
TO MAIN PCB P202
IC300 BU4053B
IC301 BU4066BL
IC302 BU4066BL
IC303 BU4053B
TV.V.OUT
TV.A.OUT
TV.V.IN
TV.A.IN
T/V
D.A.OUT
TU/D
EXT.D.A
D.V.IN
D.A.IN
IDL 12
D.V.OUT
EXT.D.V
V.GND
A.GND
WF300
TP302
GND
TP300 V.OUT
TP301 A.OUT
SORTIE POUR TV
DECORDER
21PIN
P300
P301
P302
P303
P304

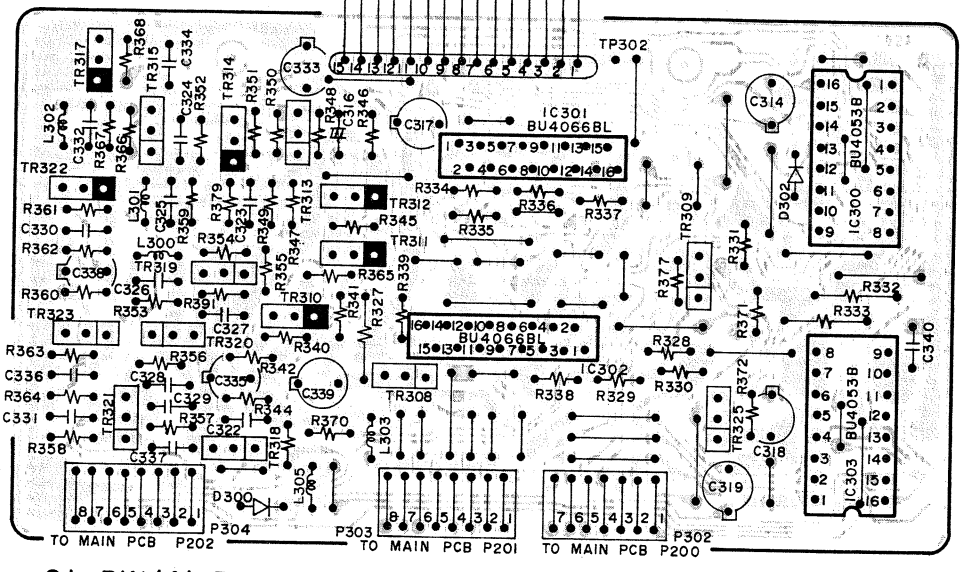
21 PIN(B) PCB V1076B502B(J1)

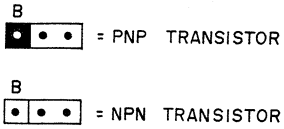




2SA1317(T,U)
2SC3330(T,U)
DTA144(E,S)

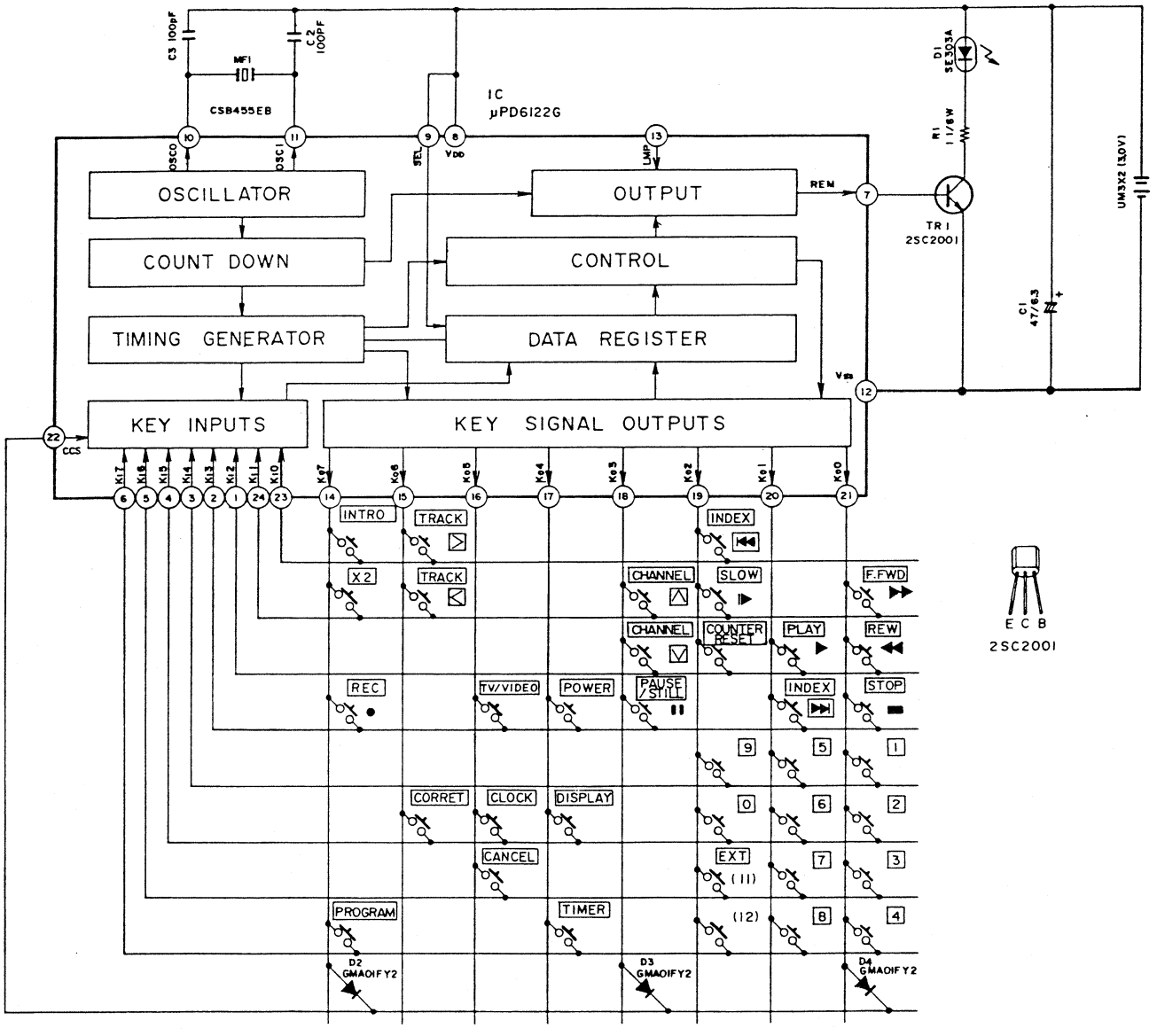






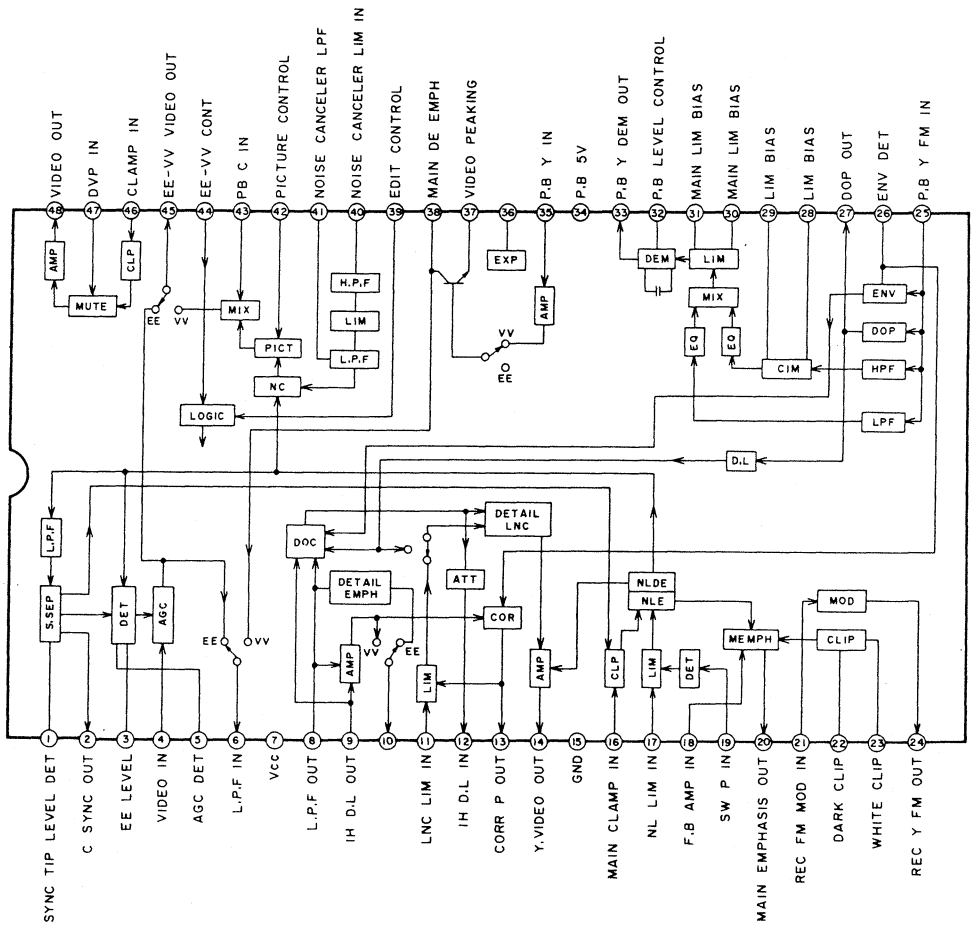
2SA1317(T,U)
2SC3330(T,U)
DTC144(E,S)

21 PIN(A) PCB V1076B502A(J1)

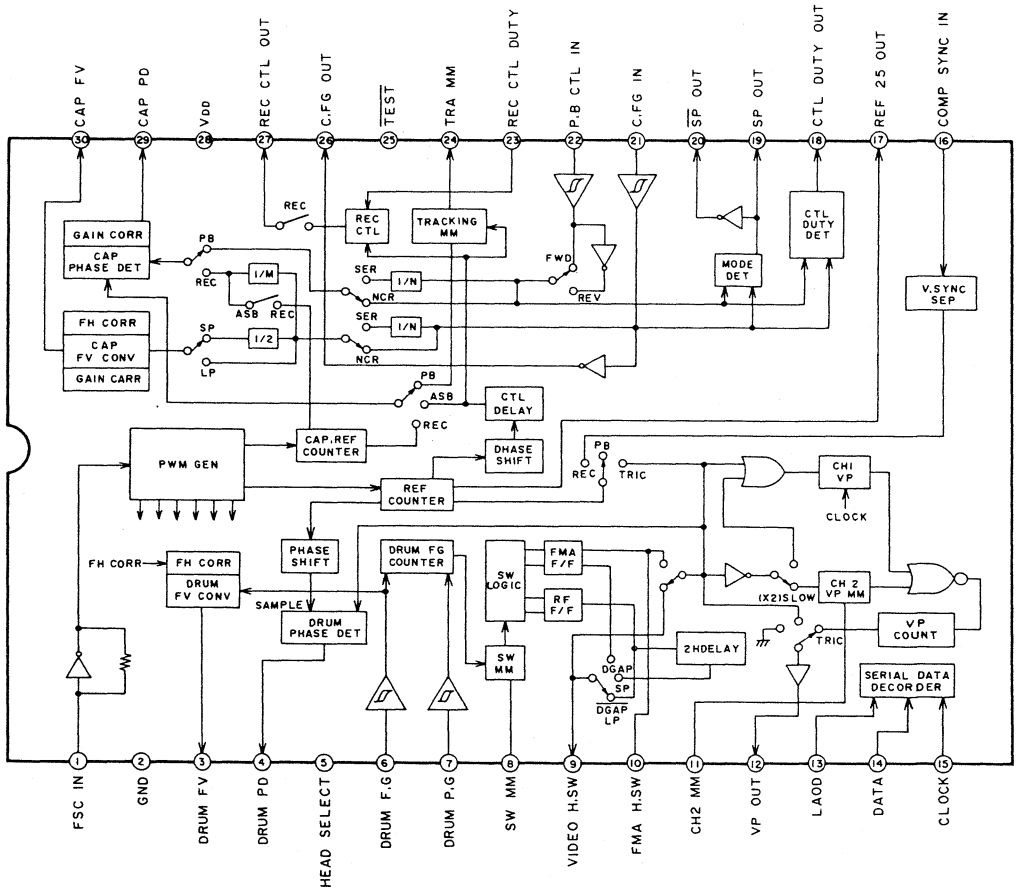


RC-V22A
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.6-6 880207F

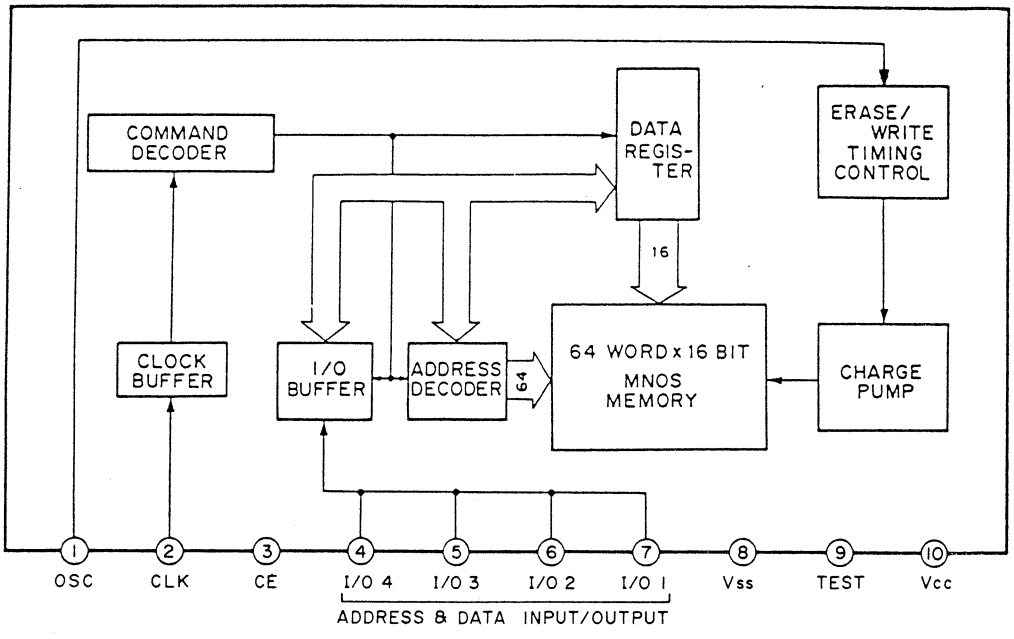
AN3231K (VIDEO Y SIGNAL PROCESSING IC)



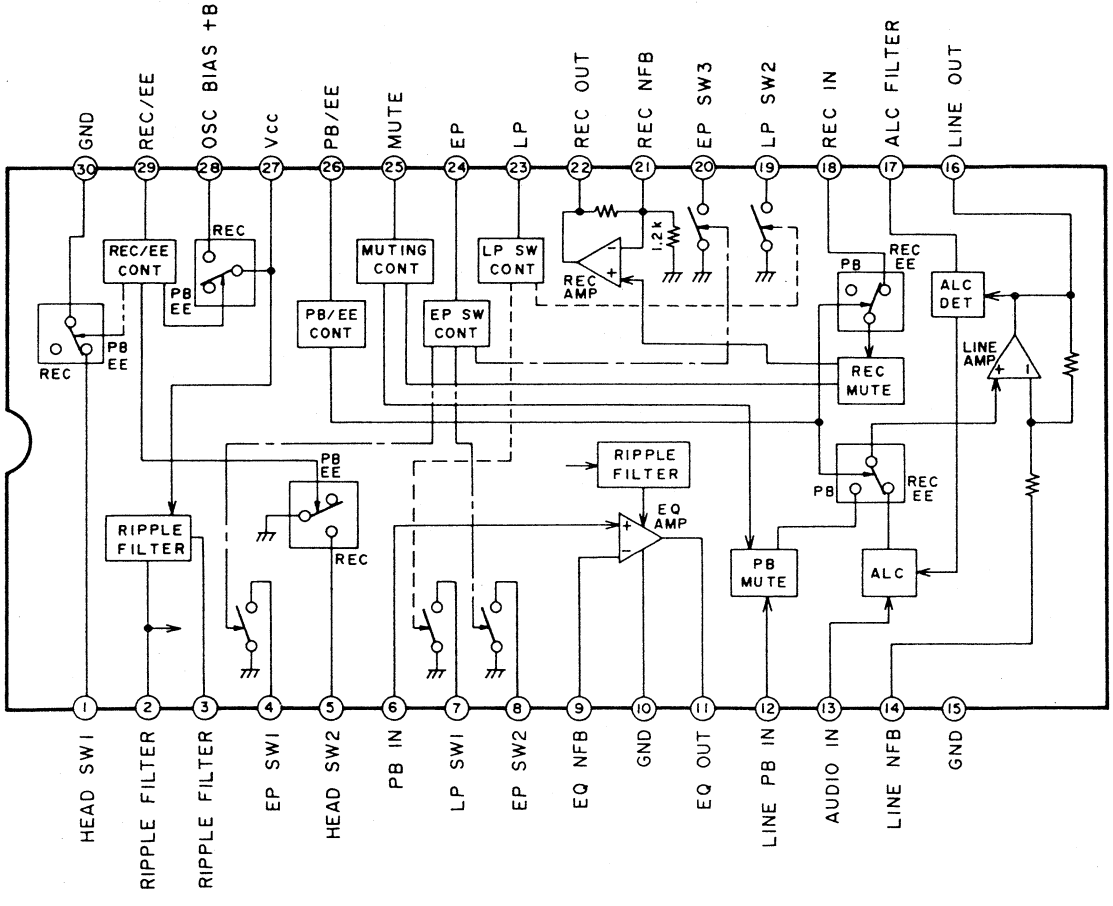
BU2735AS (DIGITAL SERVO)



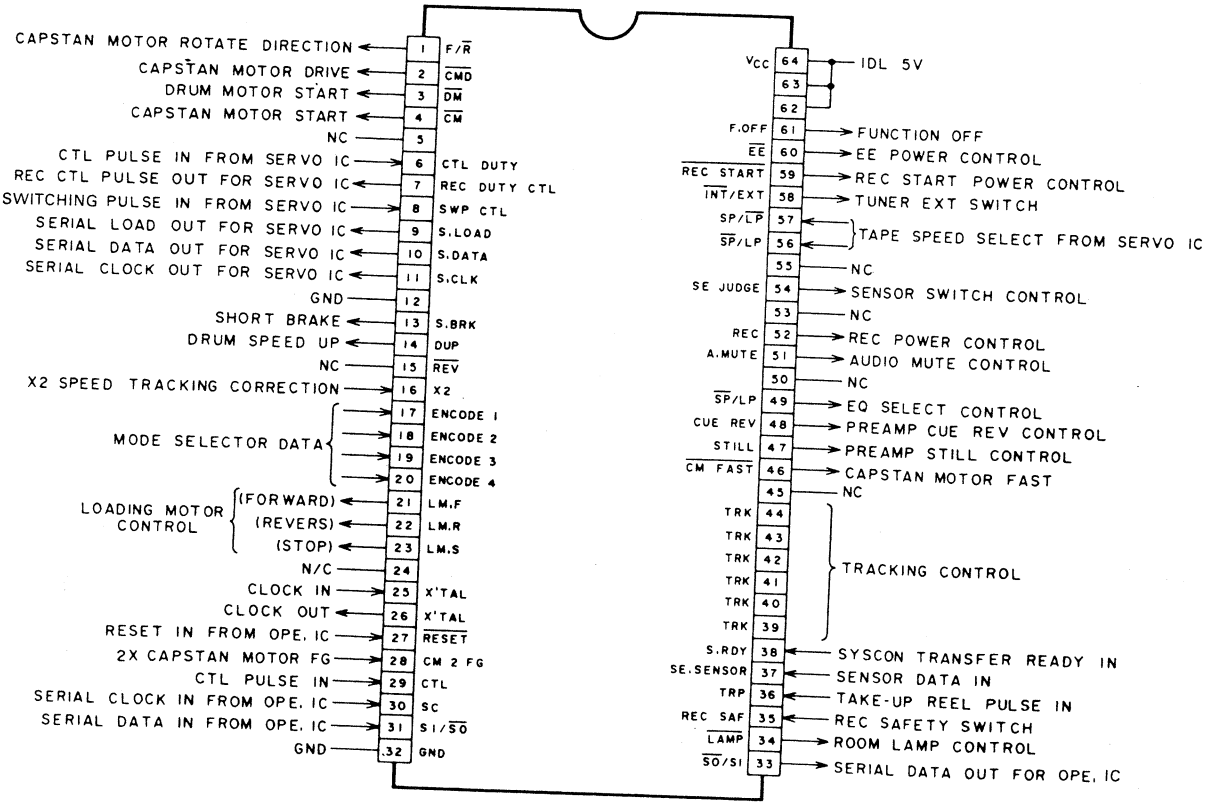
CXK1006 (NON VOLATILE RAM)



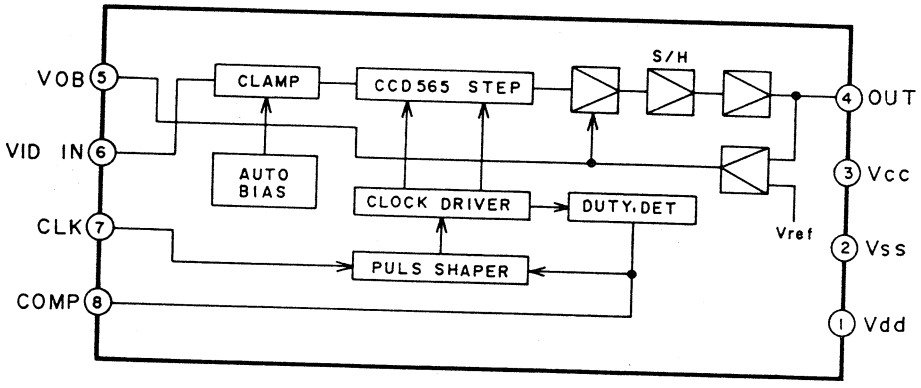
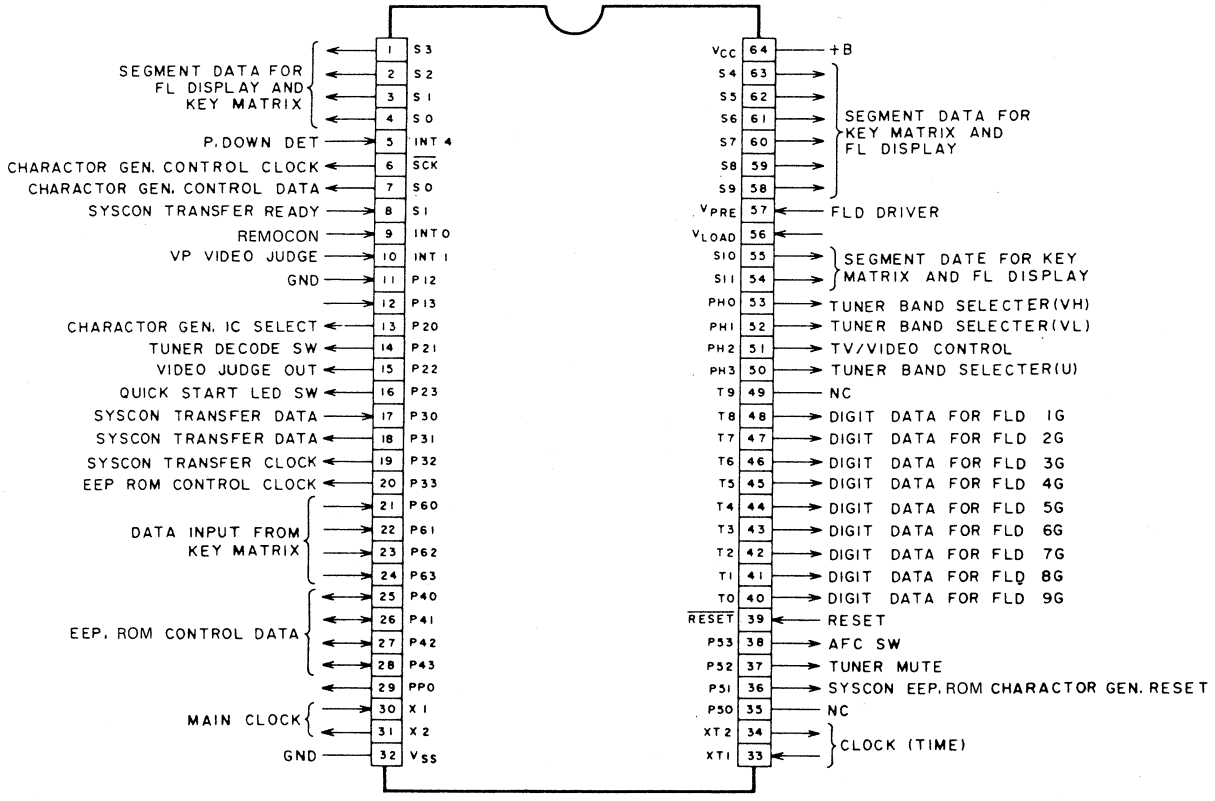
LA7292 (AUDIO SIGNAL REC/P.B AMPLIFIER)



MB88525-192G (SYSTEM CONTROL)



MSM6965-3RS (IH CCD DELAY LINE)



μPD75208 CW-LCXOPF2 (OPERATION)